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DOGMATISM AND EVOLUTION

STUDIES IN MODERN PHILOSOPHY

BY

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AND

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PREFACE.

The term 'dogmatism' is here used to denote the body of logical assumptions which were generally made by thinkers of all schools, before the rise of theories of social and organic evolution. Its application is therefore wider than common usage would warrant. The empiricism of Berkeley and Hume, as well as the rationalism of Descartes and Leibniz, is included in its scope. The first part of the present work is devoted to the analysis and illustration of the dogmatic principles. In the later parts we have examined some of the philosophies by which dogmatism has, upon one side or another, been assailed: the critical philosophy, absolute idealism, and, at much greater length, pragmatism.

It is to an excursion over well-traveled roads that the reader is invited. A glance over the pages will show them to be fairly sprinkled with the great names—Bacon, Hobbes, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant, Hegel, Mill, James—while few others are mentioned except in passing. In a history this would be a sore defect. But our object was not history, but the critical analysis of principles; and this required the confinement of the discussion to a comparatively few systems that would be recognized as typical.

While these pages were in press, William James passed away. The debt which we, in common with all of the younger American thinkers, owe to him cannot be measured—unless, perhaps, by the very eagerness with which we have upon many points attacked him. With the other leader of the American pragmatists, Professor John Dewey, we stand in a much closer sympathy. We say this here, because the hostile criticism which we have passed upon his theory of immediate empiricism ought not to disguise our direct indebtedness to him upon other lines. To Mr. Schiller no direct reference has been made, but certain of his characteristic positions are noticed in Appendix I.

These studies make little claim to systematic unity. Unity of a certain sort, indeed, they will be found to possess, namely, unity of purpose and of point of view, but not that of the monograph or treatise. There is one omission, however, which we especially regret. After considerable prominence is given to the theory of relations in the first and second parts, the subject is only incidentally treated in the third. But one of the writers having been forced to withdraw from the work, the attempt to supply this omission would have meant the indefinite postponement of publication.

The book is the product of a genuine collaboration. Some division of labor was necessary at the outset; but almost endless discussion, together with repeated revision by both writers, has made the work in a peculiar sense our common property.

BRYN MAWR COLLEGE,
September 12, 1910.

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PART I
THE OLD DOGMATISM

CHAPTER I

UNIVERSAL MATHEMATICS *VERSUS* UNIVERSAL PSYCHOLOGY

Had Lord Bacon known that in the century following the publication of the *Advancement of Learning* no school of philosophers would acknowledge him as master, he would not have been seriously disheartened at the prospect. Splendid as was the ambition of the scholar who chose all knowledge for his province, that ambition did not include the founding of a school. In truth, to his mind such an accomplishment seemed so slight, and the distinction it won so petty, that he was content to leave it to ingenious but narrow-minded men. What he wished to found was not a school of philosophy, but philosophy itself—or science, if you please, for in his day the two terms were still synonymous. But had he known that by far the most important movement of thought during the next three generations was to be in direct and conscious opposition to his most cherished principles—in England as a reaction against his influence, on the continent in contemptuous disregard of him—only a sublime faith in their truth could have saved him from utter discouragement. Writing in 1739, the young David Hume comments upon the fact, that the whole period of the pre-Socratic philosophy in Greece was “nearly equal to that betwixt my Lord Bacon and some late philosophers of England, who have begun to put the science of man on a new footing.” Yet the institution of a body of experimental “sciences of man” was the part of Bacon’s program that was nearest his heart, and that he himself did most to forward.

The phenomenon is certainly a striking one. Bacon had taught that deduction, as a scientific method, was useful only for purposes of instruction, and even so was better fitted to produce a showy than a real and thorough knowledge; and that for the discovery and establishment of truth induction and ex-

periment were all-important. The great rationalists of the seventeenth century—Hobbes, Descartes, Spinoza, and Leibniz, for example—however great their differences in detail, were agreed upon the general point, that deduction is the sole ultimately satisfactory mode of proof; that experimental methods are wholly subordinate devices, which may, indeed, be indispensable in the course of a complex investigation, but which the completed theory must in every case cast aside. Bacon had taught that science must begin with particulars, rising by successive inductions to more and more general laws, and arriving at its supreme explanatory principles only at the last stage of its endeavors. According to the rationalists, that whole ascent is a mere preliminary to the task of science; science itself begins with secure first principles, and its problem is the explanation of the more particular laws of nature as necessary consequences of the first principles. Finally, whereas the rationalists one and all regarded precise definition and the consistent use of terms as prime necessities for scientific discussion, and counted upon these as most potent aids to the discovery of truth, the great chancellor held that the establishment of definitions belongs not to the beginnings of science but to its consummation, and that in the meantime the effort at verbal consistency is only too apt to issue in self-deception.

It would be beyond our present purpose to attempt a complete explanation of this phenomenon—the temporary unsuccess of Bacon's polemic. It has been customary to attribute it in great measure to personal defects in him; especially to a lack of plodding thoroughness, that made his brilliant suggestions mere suggestions, and left his programs of scientific advancement unsupported by actual solid contributions to knowledge. Two other causes were probably more important. The first of these was the silent influence of Aristotle. It is true that in the seventeenth century it was not the fashion to refer to Aristotle except for the purpose of emphasizing one's disagreement with him and one's contempt for his authority. But "he who flees is not yet free"; and never did the perennial vigor of the ancient rationalism

show itself more clearly than in the control which it exerted over the development of rationalism in the seventeenth century. A good part of Hobbes's *Computation, or Logic* is scarcely more than a simplified restatement of the leading principles of Aristotle's methodology, in terms of the already traditional English nominalism, and not improbably profited by some study of the Greek original. In the case of the continental rationalists, the dependence is generally more indirect—through the continued prevalence of conceptions inherited from scholasticism—but not less evident. The opening paragraphs of Descartes's *Discourse on Method* afford a singular illustration of this. He is inclined to think that the intellectual differences between men cannot have to do with their *reason*, because that faculty is the distinguishing characteristic of the human species, which completes its definition, and consequently must be present equally in all members of the species. From this one fossil vestige, well-nigh the whole skeleton of the classical logic might be safely reconstructed.

The other influence to which we referred was that of the mathematical sciences, and especially of the geometry of Euclid. It is difficult for us today to realize what the possession of this work meant to the thinkers of the later renaissance. To these pioneers of modern science it was the very image of all that they hoped to do, and, more than that, an unquestionable guarantee of the competence of the human mind to solve the riddles of the universe. While physics and physiology were still the sport of vain and conflicting theories, here, at least, was a science. With all of the unfounded pretensions and lamentable failures of the Greeks, so much they had accomplished. This was their great bequest to the modern world. Accordingly we can understand that in the seventeenth century the hope of a science meant the hope of a new geometry. Whatever modern methods, experimental or analytical, might be employed in its construction, the finished product was to be of the one uniform type.

How was this type understood? In the most natural and

perfectly obvious fashion. At its basis were conceived to be a certain number of indemonstrable but self-evident propositions, involving a certain number of indefinable but self-explanatory terms. Resting upon this basis were series of propositions of ever narrowing generality and increasing complexity. The truth of the later propositions was supposed to result from, and to be guaranteed by, that of the earlier propositions, without giving to these any reciprocal support. It seems to have been popularly supposed that the order in which the propositions followed upon one another was quite fixed, or admitted, at any rate, of no radical alteration; and, although, of course, mathematicians were well aware that this was not the case, they were nevertheless inclined to think that one order alone could represent with perfect clearness the exact interrelations of the concepts involved, and that all others were therefore open to ultimate logical criticism. The discovery of this ideal order was therefore regarded as a very great desideratum.

The influence of mathematical conceptions upon philosophy was due in part to the fact that two of the great rationalists, Descartes and Leibniz, were among the founders of modern mathematical science, and that many lesser members of the school were competent mathematicians. With Descartes, indeed, whose system was the point of departure for the whole movement, the philosophy was the result of a deliberate attempt at an extension of the mathematics. Inspired by his success in developing the great discovery of his early manhood—the application of algebraic analysis to the solution of geometrical problems—he thought to apply a similar analysis to the fundamental problems of all departments of science. Had Descartes lived a little earlier, Bacon would surely have cited his system as the superlative instance in all history, of the Idol of the Cave. After telling us how Aristotle, when he had discovered and classified the various forms of demonstration, was thenceforth driven to interpret all the phenomena of nature and society in terms of this new logic; and after taking his fling at his countryman Gilbert, who had

pondered for years over a magnet, until he saw magnetism everywhere and in everything; he would have capped the climax with the inventor of analytical geometry and author of the *Discourse on Method*.

But rationalists who were by no means distinguished as mathematicians were scarcely, if at all, less under the influence of mathematical conceptions. The most obvious example is Spinoza, composing his *Ethics* in "geometrical order," and illustrating the invariability of natural causation by the necessity with which the idea of a triangle implies that the sum of its angles is two right angles. Hobbes, too, who was so far from competence in geometry that he is remembered in its history only as the most fatuous of circle-squarers, must nevertheless be said to have owed the first flush of his enthusiasm for science, as well as his first clear conceptions of scientific method, to a copy of Euclid's *Elements*. On the other hand, Leibniz, the greatest mathematician of the whole group, was not least a slave to mathematical notions, though in various directions he strained these notions to their breaking-point. His writings are, indeed, remarkable for their constant use of principles which in their manifest implications far transcend the rationalistic standpoint. More than any other modern philosopher—except perhaps Bacon—he was a man of the world with the most far-reaching social and political interests. Yet his logical theory remained mathematical to the core, though the uses to which he endeavored to put it were strikingly, nay absurdly, concrete. Thus, for example, he was not above enforcing a practical social optimism by a reference to the law of the parallelogram of forces. That this is the best of possible worlds might be seen in the fact, that every change that takes place in the world comes about with the least possible expenditure of energy; so that, considering the state of affairs at each moment of the world's history, as much as possible is always happening!

We have mentioned several dogmas upon which all the great rationalists are found to be united. The essential point is prob-

ably this: that science (or philosophy) consists wholly of universal and necessary propositions, a limited number of which are self-evident and form a sufficient body of premises for the deduction of the rest. The principal division between rationalists is upon the question of the nature of the self-evident first principles. For Hobbes (as a nominalist), these could be only arbitrary definitions of terms to be employed. For the great mass of continental rationalists, they are significant truths which are cognized by a special faculty of reason called 'intuition.' For Leibniz, they are again definitions; not of mere terms, however, but of concepts. All, again, are agreed in declaring that observations of matter of fact are invariably particular and contingent; and furthermore that whereas universal propositions are conditional in their import,¹ particular propositions are categorical and, as such, *existential*—*i. e.*, imply the existence of their subjects. Accordingly, the whole realm of truth is divided into two distinct provinces, that of reason and that of sense-perception, the former consisting of *necessary implications*, the latter of *observed facts*.

All rationalists are further agreed upon certain metaphysical conclusions. If science is deductive, the world must be such as to be knowable by means of deductive science. If knowledge is to fall into series of logically consecutive propositions, the world itself must be similarly ordered. As Spinoza puts it, the order of thoughts and the order of things are the same. In other words, the relation of *premise to conclusion* in the system of scientific doctrine must everywhere exactly correspond to a relation of *cause and effect* in the system of objective reality. From the methodological standpoint, this means that all explanation or proof of anything must be in terms of its causes—knowledge of its effects throws no light upon its nature at all.² The intuitionists (or rationalists proper, as we may call them) proceed to a

¹Thus Hobbes maintains that political science (like geometry) is altogether independent of the question, whether any such thing as a state (or a straight line) has ever existed in the world or not.

²The reasoning from effects to causes, which Hobbes includes in his definition of philosophy, is only an apparent exception; for such reasoning, he finds, is never conclusive.

further inference, in which it may be difficult for us to follow them; namely, that the relations just described as everywhere parallel are in fact identical. The necessity with which the cause produces its effect *means* that a mind possessed of complete knowledge of the former must be able to predict the latter, that is to say, deduce it from the cause as premise. Thus the fundamental nature of the circle, conceived as produced by a rotating line, is the *cause* of all its other properties—for example, of the fact that every radius is perpendicular to the tangent at its extremity. From this extreme form of the doctrine, Hobbes is saved by his nominalism; while Leibniz is distinguished by his ‘principle of sufficient reason,’ according to which the determination of an effect involves not only logical necessity but the selection of the best out of an infinite number of logically possible alternatives.

The keystone of continental rationalism is the doctrine of substance. While the provinces of reason and sense-perception are wholly distinct, a certain connection arises from the obvious consideration, that when a fact is attested by perception a number of consequences may logically follow from it. Indeed, every observed fact, no matter how irrelevant it may appear from the standpoint of pure science, is known by the law of causality to be absolutely determined by, and thus deducible from, a series of previous facts. Unless, then, some one or more facts could be conceived as eternally necessary on their own account, and thus as serving to support all other facts, the whole chain of facts, taken in its entirety, must be thought of as hanging in mid-air—which appeared to be inconceivable. Such necessary fact or facts could, however, be attested by no act of perception; the only adequate witness is reason itself. The entity whose existence is implied in any such eternal fact is called a *substance*; and those philosophers who believe in the existence of but a single substance call it *God*. In the nominalistic theory this entity is an unknowable, to which, however, the name of God is also given. Those, too, who accept the existence of a plurality of substances,

regard one of these as supreme, the others being substantial only in a secondary sense, as dependent for their existence on the supreme substance, or God, alone. Thus the existence of God has a unique place in the rationalistic scheme of things. It belongs, in a way, to both kinds of truth. It is a *fact evident to reason*, and the necessary presupposition of all other facts.

The development of rationalism in the seventeenth century was followed by an equally brilliant development of empiricism in the first half of the eighteenth century. Bacon at last came into his own. The movement is commonly regarded as dating from the publication of Locke's *Essay concerning Human Understanding* in 1690. Against the common view it has been urged with much force that Locke was at least as much a rationalist as an empiricist; and, indeed, his direct debt seems to be far greater to Descartes and Hobbes than to Bacon. His theory of mathematics and ethics is strongly rationalistic. He believes these sciences are concerned wholly with the relations between ideas in our own minds, and are in need of no confirmation from experience. The ideas of which they treat are arbitrarily put together by us; and the principal caution which we must observe in their manipulation is to define accurately and use consistently the terms by which we choose to denote them. Locke therefore accepts the distinction between intuitive and demonstrative truths on the one hand and inductive probabilities on the other, and maintains that the latter can never through any process of experience be raised to complete certainty. He believes, for example, that the existence of each one of us is intuitively certain to himself, and that the existence of God is demonstrably certain; while the existence of other persons and things can only be *morally* certain, that is to say, true enough for all practical purposes.

On the other hand, there are two peculiarities in Locke's doctrine which were very important for the future development of empiricism. In the first place, he attacked one of the most central positions of rationalism by maintaining that all our ideas

of substances, whether material or spiritual, finite or infinite, are inadequate—*i. e.*, fail to correspond accurately to their objects. In the second place, his theory of intuition differed from that of the rationalists in a way which brought into prominence a new problem for science. According to the rationalists, the intuitive truth presents itself to reason as a whole,—subject, predicate, and all. According to Locke, the ideas involved in such a truth must, like all other ideas, be originally derived from experience, however they may have since been modified by processes of abstraction and composition; all that intuition gives is the connection between them. Locke was thus led to undertake to show in detail how various ideas and classes of ideas—especially those which had been generally regarded as intuitive—are indeed derived from our outer and inner experience, or, as he puts it, from sensation and reflection. And though his methods of research were primitively crude, he succeeded in endowing modern psychology with a problem of the first importance: the origin of our ideas.

As mathematics was the science of sciences for rationalism, all other sciences being either extensions or special applications of this one; so for empiricism psychology became the science of sciences, central and fundamental, its method being the organon of philosophy. There had been psychology before this, occasionally (as in the early chapters of Hobbes's *Leviathan*) containing suggestions whose full value has only recently been realized. But for the most part it was a very superficial affair, a formulation of definitions of various mental processes, based on no evidence except undisciplined observation. The elementary distinction between the logical implications of an idea or a passion and its actual structure in consciousness was either unrecognized or neglected. Psychology is of all sciences the least amenable to deductive treatment, the one in which even today it is most necessary to keep one's eye fixed on the phenomena to be described and declare simply and plainly what one finds there. No modern man before Locke had done this, and Locke himself

was incapable of doing it with any consistency. But he made the attempt inevitable to the generation of investigators who followed him.

The development of English empiricism was carried on in two lines which at first appear to be entirely separate. On the one hand, Mandeville, Shaftesbury, Hutcheson, and Butler attempted in various directions and with varying success to apply the empirical study of human nature to ethical problems. On the other hand, George Berkeley in his *New Theory of Vision*—a work which marks one of the great turning-points in the history of science—formulated with distinctness the method of introspection and applied it with unsurpassed acuteness and judgment; and in his *Principles of Human Knowledge* first claimed for psychology the highest place among the sciences, subjecting their fundamental conceptions and principles to its final jurisdiction. The two lines of development meet in David Hume.

The form which the system of empiricism took in Hume's hands may be outlined somewhat as follows. All science must begin with human experience and can never get beyond it. The fundamental science is thus the science of human experience as such; and all explanations whatsoever, if carried back with rigor, must lead us at last to psychological considerations. However, no complete solution of any problem—that is to say, no solution in terms that do not themselves constitute new problems—is ever possible. Science must be fundamentally inductive. All our reasonings must start from principles of whose ground we have no inkling, but which we assume to be true simply because they appear to be verified by our detailed observations of matter of fact. The limit of explicability is reached in the elementary sensations and feelings, the fainter ideas which copy them, and the observed laws of the association and mutual relations of the elements.—No existence over and above our perceptions is conceivable. The idea of substance is indispensable to common sense, but wholly useless to science—except as it may be identified with a closely conjoined mass of ideas. The belief in an ex-

ternal world, the belief in God, nay even the belief in the existence of our own minds—as distinct from the hosts of ideas which flit through them—is matter, not of knowledge, but of blind instinct, which science can in a measure account for, but which it must in vain attempt to justify.—If substances are thus to be subjectively interpreted, so also are relations. These are but various ways of *comparing* ideas; or, more precisely, they are complex ideas formed from simpler ideas by the inexplicable process of comparison. Certain classes of relations—for example, the equality or inequality of quantities or numbers—are found to be completely determined by the ideas compared; that is to say, while these ideas are unchanged the relation remains the same. Such relations give rise to no peculiar problem. They are expressed by universal propositions, from which valid deductions may be made; and in the cases above mentioned the deductions are so extensive as to constitute special sciences. The other class of relations (those of space and time, identity, and causality) are more remarkable.¹ The utmost analysis of any acknowledged cause and effect (for example) will reveal no quality or combination of qualities in either or both that determines why the one should be thought to produce the other. And the most exact attention to two bell-tones will disclose no shade of difference between them that could account for the one's being heard as preceding or following the other. In every such case, therefore, the relation must be supposed to be determined by other accompanying sensations, feelings, or ideas. Thus the second of two bell-tones may be accompanied by a memory-image of the first. In the case of causality, the relation depends upon a feeling of 'necessary connection,' which accompanies the habitual movement of the imagination from one event to another, when they have frequently been observed to occur in close succession and uniform order. Causal necessity is therefore by no means equivalent to logical implication. Nor is it a property of the operations

¹The inclusion of identity in the list is at first sight surprising. But it is meant that at most a complete resemblance can be actually determined by the comparison of two ideas. The interpretation of this as identity is another thing.

of nature, in themselves considered, but a property of our imaginations projected forth upon them.

Such were the two great types of philosophical thought which prevailed among the leading minds of Europe for five generations. We are aware how scanty has been our exposition, and how much that is of first class importance has been passed over. And yet, could we have contrived it, we should have cut the account still shorter. For our object has been simply to present the main lines of cleavage with all the distinctness of a glaring contrast. As we conceive it, the difference is essentially one between two scientific ideals, gained from the two sciences which were in most active progress at that time. Well-known parallels of greater or less suggestiveness are to be found in the influence of the science of mechanics upon Kant, of the history of civilization upon Hegel, of biology upon the ethical speculation of the half-century since the *Origin of Species*, and of comparative and social psychology upon many thinkers of today.

In this connection it is interesting to note that of the greater English empiricists not one was a mathematician. Berkeley, indeed, had a more than ordinarily good training in mathematics, and showed a very keen interest in such studies. His earliest published writings were upon mathematical subjects. But his greatness lay elsewhere. Hutcheson, more than any other of the school, was influenced in his thought by mathematical conceptions—sometimes in a very grotesque fashion. But this was only in the details of his system; its general structure was wholly psychological. Equally interesting is the impermeability of Leibniz to the influences of the new psychology. For Leibniz, among all philosophers, ancient and modern, is conspicuous both for the breadth of his sympathies and the clearness of his critical insight; and his literary life overlapped not only Locke's but Berkeley's. Locke, indeed, he understood—except where a spirit of prophecy was necessary to understand him; but in Berkeley's epoch-making work he could see nothing at all. And in his own psychology

the significance of introspection as a method of analysis finds scant recognition. Consider for a moment the central feature of his psychological theory, the conception of subconscious sensations (or *petites perceptions*, as he called them). By what manner of argument is the assumption of their existence supported? We hear the sound of the waves beating upon the shore. The waves are made of tiny drops, the separate sounds of which we cannot distinguish. But yet we may be assured that each drop makes some sound; for if the drops were silent the whole ocean would be dumb. What would Berkeley have thought of that? Leibniz's followers endeavored to make room for the new psychology by giving it a place alongside of the old, distinguishing thus between *empirical* and *rational* psychology. This was as far as appreciation of it went.

In insisting thus upon the contrasting characteristics of rationalism and empiricism, we have had an ulterior object in view; namely, to prepare the way for an exposition of their common presuppositions. To have attempted this latter task without such preparation would have been doubly dangerous; first, by exposing us to the criticism, that we were losing sight of differences and endeavoring to confound well-established distinctions; and, secondly, by putting us in the position of one who is arguing for a thesis and hence is involuntarily led to suppress or distort the facts which tend to weaken his contention. Whereas now we can at least pretend to candor, and can prosecute our discussion without fearing that we shall be accused of a partisan interest in its outcome.

CHAPTER II

THE COMMON BASIS OF EMPIRICISM AND RATIONALISM

I. THE CERTAINTY OF IMMEDIATE EXPERIENCE

A very pointed discussion has recently been carried on, concerning the proper standpoint to be assumed in the criticism of the philosophers and philosophical schools of the past. How far ought we to forget the increased knowledge which the years have brought us, and, entering into the life of the past, to judge of the value of its theories only in their own terms? Such conduct seems a commendable generosity to old friends. But are the philosophers more our friends than truth; and can the claims of truth be satisfied if the standards by which we judge be anything less than established fact and cogent demonstration? The question has had a two-fold bearing, according as the reputation of the thinker or the continued consideration to be given to his work has been regarded as at stake. On the first score, the historically minded critics have a comparatively easy case to defend. Few men of sense are now inclined, for example, to begrudge Descartes his fame as a natural philosopher, because his vortex-theory of creation or his hypothesis of animal spirits flowing through hollow nerve-channels has been definitely abandoned. The greatness of the scientist does not depend wholly on his permanent achievements. But, on the second score, the justice of the historical attitude is not so clear; and many a learned critic must have felt the accusation rankling within him, that he had debased the study of philosophy to a mere æsthetic appreciation of harmonious and grand ideas.

There are several reasons, nevertheless, which constrain us to the opinion, that with doctrines, as with men, the sympathetic criticism is the best. In the first place, the observation is familiar, that the endeavor to do bare justice is a constant source of

rank injustice,—that the habit of checking up each paragraph of an author with the reflection, “After all, is this true?” is to ensure constant misinterpretation. For interpretation, at any rate, must be historical; and the mental agility to skip back and forth over the interval of even a century is not human. Even the canons of sound deduction, extra-temporal as their validity may be, can seldom be applied by the critic without a thought as to the scientific atmosphere that may have enveloped and given color to the naked words that remain. The men who find fallacies in Plato are generally superficial students. No man puts on paper anything approaching a complete record of his thought. For one premise expressed, there are ten that writer and reader alike supply from their common fund of assumptions. And the inadequacy of the expression is only magnified when the writer departs from the tradition of his school, correcting the assumptions which both he and his reader have alike regarded as indubitable. For though the need of free and full expression is sensibly increased, the possibility of real intellectual intercourse is as much diminished. One is tempted to remark that no man ever understands a philosophical doctrine who has not been previously led to a similar hypothesis in the course of his own reflections. This, at any rate, we may safely say: first, that to discover a formal fallacy in the reasonings of one of the great masters is, generally speaking, equivalent to revealing one’s own lack of comprehension; and, secondly, that when the existence of the fallacy is fully established it remains probable that the particular line of argument thus demolished has in reality little to do with the acceptance of its conclusion. The really significant errors of the philosophers are upon a far more magnificent scale. They have their sources in peculiar limitations of character and environment; and in their consequences they affect the entire world-view. The well attested fallacy is, rightly regarded, but one surface indication among the many that must be patiently sought out, of vast underlying strata of thought.

True it is, indeed, that however frankly one may in general

terms admit the probability that one's interpretation is incorrect, one must in each particular case make the most of the best light that one possesses. If any of Plato's arguments appear to the student to be patently unsound, they must pass with him for unsound until he has been convinced of the contrary. And while in the midst of one's reading it may be necessary to lose oneself by a species of dramatic illusion in the thoughts and feelings of the past; still there must be times of afterthought when one attempts to bring past and present together,—to sum up the permanent contributions of by-gone schools to one's own world-view. Nevertheless, as we must in the second place remark, the significance of these admissions is modified by the fact that the present world-view, by which we judge the past, is itself in process of development. It is not even as if we possessed a fixed body of scientific doctrine, which could be modified only by accretion; that is to say, by the addition of new facts and principles which should leave the old unchanged and undisturbed. If that were the case, an objective and final criticism of earlier theories would not be so impracticable. But, on the contrary, the progress of science is a true evolution, an organic growth, in which no part is wholly unaffected. Time-honored formulæ, even if unrefuted, are narrowed in their field of application, or, by inclusion in more comprehensive generalizations, become possessed of a new significance. Thus, while two and two still make four and doubtless will continue to do so, the science of arithmetic has had a new birth and the general conception of number itself has been transformed, since the establishment by Cantor of the existence of distinct 'transfinite' numbers.

In the third place, the chief motive which we have for studying the thought of the past is such as to make sympathetic criticism of the greatest possible importance. For that motive is self-knowledge,—the analysis of the categories of contemporary thought in the light of their development. The method of analysis to be employed is fundamentally the same as is used in genetic investigations of every sort. As a moving object is easier to

distinguish than one at rest, so the developing organism reveals the intricacies of its structure far more easily than the same organism studied at only a single stage of its life-history. And so also the philosophical conceptions, which to our direct examination appear to be inexplicable intuitions of the human mind, may exhibit their hidden content with the greatest clearness when the record of their various metamorphoses lies before us. Thus the question of deepest interest is not: "How far can Plato's thought be made to square with the science of today?" but rather: "How far has Plato's thought entered into the living tissue of the science of today?" The most valuable criticism, therefore, is contained in a plain and clear exposition. The best refutation of a theory is the unvarnished history of its transformations.

To many of our readers all that we have just now been saying must appear to be sheer truism; and very few will question its substantial correctness. It may, therefore, be thought worthy of note, that not one of the writers whom we have mentioned would have found a word of truth in the whole discussion. No feature, in fact, is more characteristic of the old dogmatism than the general incapacity of thinkers of both schools to recognize the fact (or the possibility) of an evolutionary progress of human knowledge. If science should advance, it must be by the addition of new truths to old. That half-truths might grow into whole ones was unsuspected. As truth was absolute truth, so error was absolute error; and as the former was most advantageous, so the latter (whether avoidable or unavoidable) was most detrimental, to the acquirement of further truth.

Of the rationalists this holds true as a matter of course. The very essence of anti-evolutionism is expressed by Spinoza in his letter to a recreant pupil: "I do not presume that I have found the best philosophy, I know that I understand the true philosophy. If you ask in what way I know it, I answer: In the same way as you know that the three angles of a triangle are equal to two right angles."¹ It is not a question of comparisons! But

¹*Letter LXXIV, Elwes tr.*

the most complete illustration of which we are aware is to be found in the second part of the *Discourse on Method*. The very first reflection which is there recorded is upon the fact, "that there is seldom so much perfection in works composed of many separate parts, upon which different hands have been employed, as in those completed by a single master." This might be seen in buildings, cities, religions, and civil constitutions. The same is true of the "sciences contained in books"—at least the non-mathematical sciences. And finally the very development of each one of us from infancy is a most unfortunate necessity. "It is almost impossible that our judgments can be so correct and solid as they would have been, had our reason been mature from the moment of our birth, and had we always been guided by it alone." It is *under the influence of this reflection* that he determines upon a clean sweep of his previously entertained opinions, and that he adopts as the first maxim of his future scientific endeavors: "never to accept anything for true which I did not clearly know to be such."

Among empiricists the same blindness to the possibility of a true evolution of knowledge prevails. "Nothing," says Hume, "is more usual and more natural for those who pretend to discover anything new to the world in philosophy and the sciences, than to insinuate the praises of their own systems, by decrying all those which have been advanced before them."¹ This attitude is typical of pre-evolutionary thought; and Hume does not deny that it is substantially his own. He is only concerned to excuse the implied effrontery of his new pretensions. And his excuse is the usual one. He has found a new mode of attack, a new avenue of approach; he is applying new methods, or is radically enlarging the scope of old ones. Thus he hopes to succeed *where others have failed*. That his own philosophy is an almost inevitable outgrowth of the speculations of Locke, Berkeley, and Hutcheson, he does not for a moment suspect.

The *certainly of immediate experience*—"seeing is believing"—

¹*Treatise of Human Nature*, Introduction.

is a principle which in the history of philosophy may be said to date from Empedocles of Acragas, but which common sense has no doubt held from time immemorial. Not that either philosophy or common sense has always been agreed upon the matter. Indeed, as a philosophical dogma, nobody would ever have thought of asserting such a proposition, had it not previously been denied. With Empedocles it was simply a reassertion of the trustworthiness of clear perception which in the previous period of Greek philosophy had become more and more deeply suspected. The physical theories of the early cosmologists had been so utterly out of accord with ordinary observation that they (or their followers) had inevitably been led to exalt the authority of discursive reason as over against that of direct observation; until with Heraclitus, and still more with Parmenides, an absolute scepticism of the senses resulted.

In the generation following Empedocles this scepticism took on a new and more subtle form. According to a theory ascribed to Protagoras, the senses are indeed absolutely trustworthy in so far as they simply make each man aware of his own perceptive states of consciousness; but they give him no insight into the sensations of other men or into the nature of things. The notion of an indubitable immediate experience is thus preserved; but the range of its significance is seriously restricted. This doctrine of the *relativity of sense-perception* was maintained by all of the more important thinkers of antiquity (except the Stoics); and in modern times it has been held by both rationalists and empiricists. Certain of the latter, indeed, have made it a ground for doubting, or denying altogether, the existence of any object over and above the sensations themselves.

A second form of immediatism philosophy owes to Plato. Desiring, as a constructive social reformer, to found the theory and practice of politics upon a basis of indubitable truth, it appeared clear to him that Protagoras had taken away the hope of discovering such a basis in the evidence of the senses. Yet he saw that as a matter of our life-history all knowledge starts from

sensation. A partial solution of the difficulty he found in the example of geometry. Without sensible diagrams the geometrician could accomplish little, and yet the most exquisitely constructed diagram was far from conforming to the exact requirements of the science. It was evidently as a *suggestion* that the diagram was useful,—a suggestion of a perfect prototype which it weakly imitated. Was this not true of all our scientific ideas, including those of morality and statecraft (in which Plato was most deeply interested)? Is not the good man whom we see—brave, wise, temperate, and just as he may be—a very imperfect illustration of the ideal courage, wisdom, temperance, and justice of which we can conceive, and of which the philosopher attempts to frame adequate definitions? But if the conceptions of the mathematical and moral sciences are not logically derived from sense-impressions, but only suggested by them, what logical ground have they? It seems to have been properly held by the geometricians, that the fundamental conceptions of their science were self-evident and needed no further warrant. But Plato saw that this was not so. He perceived that all these conceptions involved assumptions that might perfectly well be questioned and that the geometricians had no way of defending; and he believed the like to be true of the moral sciences.

In order properly to found both classes of sciences, one must, he thought, adopt a course directly the reverse of deduction. Frankly recognizing their fundamental assumptions as mere hypotheses, one must seek for more comprehensive hypotheses which shall unite and explain the former. And the new hypotheses must be similarly treated; and the process must be repeated again and again until it is no longer necessary or possible. That is to say, the process must be repeated until a conception is reached which is no longer hypothetical, but which is indeed self-explanatory and capable of explaining and justifying all the conceptions that have led up to it. The content of this highest conception Plato called the Good; and because the conception was itself incapable of being explained in simpler terms, but

must be reached by each thinker through a like process of ascent, it came to be for later antiquity the very type of the hopelessly obscure, and men would say: "As incomprehensible as the Good of Plato." In his own mind, however, it constituted a new type of absolute certitude, in default of which no genuine knowledge was possible. The supreme conception was reached by an involved and uncertain process of thought, but when it was thus reached its truth was immediately manifest to reason. The mental act by which this takes place Plato represents by the analogy of sensuous perception. In contrast to such perception, however, it possessed a *mediated immediacy*. In a word, it was an *intuition*.

This logical theory, which with modifications of greater or less import has persisted down to our own day, descended to modern times by three principal avenues,—the teaching of Augustine, that of Aristotle, and that of Plato himself. Aristotle, who gave to the method of working up to first principles the name of *induction* (ἐπαγωγή) appears to have thought that it led, not to a single highest conception, but to a variety of first principles peculiar to the various special sciences; but each when reached was intuitively certain. With Augustine the intuition of *self-consciousness* first gains the importance which it has had in modern thought.

It is thus entirely in the spirit of the ancient rationalism that Descartes divides the task of philosophy into two parts: first, a preliminary analysis, the object of which is to discover the necessary fundamental truths; and, secondly, the deduction from these of the system of the sciences. The so-called 'criterion of truth' which he professed to use in order to distinguish genuine from pretended intuitions, is peculiarly significant. The genuine are *clear* (that is to say, indubitably present to consciousness) and *distinct* (that is to say, unmistakable in content). In both epithets the analogy of sense-perception is evident; and in both alike the recognition of an absolute beginning is apparent,—a beginning which lies beyond proof and beyond external criticism. The evidence of the intuition is entirely in itself. Reflection can do no more than note *that* it is and *what* it is.

A most instructive example of Descartes's intuitions is that which stands first in his system and which he accepts as the type and standard of them all,—self-consciousness. I may doubt (says he) the existence of all the objects of my thoughts, feelings, and desires. I may question whether the world of nature which the senses reveal be not an illusion; whether the whole content of the deductive sciences be not vitiated by lapses of memory; whether all the joys and sorrows of life, all life's purposes and ideals, be not wholly vain. But—past and future aside—I cannot question the reality of my present experience as such. I cannot doubt that such and such ideas, emotions, and impulses are now within my mind. Indeed all that I know assuredly with regard to my mind—or rather, to speak strictly, *myself*—is just the fact that I have such an experience. So much is clear and distinct. *I think, therefore I am* (or, *I, as a thinking being, exist*), is not a deduction, nor is it in need of deductive support. It stands in its own strength. It would be true, though all else were false.

It has been observed, that so far as awareness of one's own mental states is concerned, the principle of immediate certitude is equally acknowledged by rationalists and by empiricists. Indeed, the very example of an intuition which we have just taken from Descartes turns out, when carefully examined, to be a modified form of the doctrine of Protagoras, set forth (not as he had done, as a lesson drawn from experience, but) *as an intuition*. When one looks to see what meaning Descartes attributes to the *I*, or *myself*, one discovers that it is simply that which is intuitively known as thinking. And, if one further asks what a thinking being is, he replies: "It is a thing that doubts, understands, [conceives,] affirms, denies, wills, refuses; that imagines also, and perceives." All these properties unite in his nature, as certainly as he exists—even though they should convey to him no truth beyond their inherence in, and inseparability from, himself. Suppose, for example, that the perceptions of sense are false. "Let it be so. At all events it is certain that I seem to see light, hear

a noise, and feel heat; *this cannot be false*; and this is what is properly called perceiving (*sentire*), which is nothing else than thinking."¹

All this may be otherwise expressed by saying that rationalism, as well as empiricism, acknowledges the *absolute trustworthiness of introspection* as a source of truth. The difference between the two schools on this score is due, first, to the improvement of the *method* of introspection by Berkeley; and, secondly, to a consequent great divergence of opinion as regards the actual contents of the mind, revealed by introspection. The ultimate appeal, however, is to the same supreme authority.

The improvement in method is nowhere more strikingly illustrated than in the criticism of Descartes with which Berkeley introduces his own theory of the visual perception of distance. Descartes had seen that the altering convergence of the two eyes plays a frequent part in such perception; and he promptly attributed this part to the *angle* formed by the lines joining the two eyes to the observed object. The greater the angle, the nearer the object; and thus the idea of the angle must be the basis for a judgment as to the distance. But this, Berkeley says, is pure fiction. No such process of judgment takes place; and the idea of the angle, upon which the judgment is supposed to be based, is almost never present to consciousness. The defectiveness of Descartes's procedure is that he allowed himself to speculate as to *what must be* in the mind in order to account for the possibility of the given phenomenon (of distance-vision), instead of basing his explanation upon such facts as were known from direct observation. Since Berkeley's statement of the case is very brief, and since it marks an epoch in the history of science, a few lines may be profitably quoted. "It is evident that no idea which is not itself perceived can be to me the means of perceiving any other idea But those lines and angles by means whereof some men pretend to explain the perception of distance are themselves not at all perceived, nor are they in truth ever thought

¹*Meditations*, II; italics ours.

of by those unskillful in optics . . . Every one is himself the best judge of what he perceives and what not. In vain shall all the mathematicians in the world tell me that I perceive certain lines and angles which introduce into my mind the various ideas of distance, so long as I myself am conscious of no such thing.”¹ The true explanation he finds in the sensations set up by the muscular contraction involved in converging the two eyes. His language here is equally interesting. “It remains that we inquire what ideas or sensations there be that attend vision, unto which we may suppose the ideas of distance are connected, and by which they are introduced into the mind.—And, *first*, it is certain by experience, that when we look at a near object with both eyes, according as it approaches or recedes from us, we alter the disposition of our eyes, by lessening or widening the distance between the pupils. This disposition or turn of the eyes is attended with a sensation, which seems to me to be that which in this case brings the idea of greater or lesser distance into the mind. Not that there is any natural or necessary connection between the sensation we perceive by the turn of the eyes and greater or lesser distance. But—because the mind has, by constant experience, found the different sensations corresponding to the different dispositions of the eyes to be attended each with a different degree of distance in the object—there has grown an habitual or customary connexion between those two sorts of ideas;”² just as, for example, the sound of a word becomes associated with its meaning. Here we have what is at least a plausible theory, based upon a genuine introspection.

It is with the confidence born of this improved method of introspection, that Berkeley ventures to question the existence in the mind of a distinct class of abstract general ideas over and above particular ideas. Here his polemic is directed against Locke; but at the same time it attacks the very foundations of (intuitionistic) rationalism. For the essential mark of an intuition, and that which distinguishes it from an impression of the

¹*An Essay Towards a New Theory of Vision*, §§ 10, 12.

²*Ibid.*, §§ 16, 17.

senses, it is absolute universality. The rationalists would not even admit that a genuinely universal idea could in any way be built up from the data of sensation. *Generalized images* (supposed to be formed by the blurring together of a great number of similar sense-perceptions) were, indeed, acknowledged to exist; but these were to be carefully distinguished from the true ideas of reason. Thus, for example, the somewhat dim and hazy image of a triangle that may start up in the mind at the mention of the word, was believed to be a radically distinct and separate thing from the scientific conception of triangle which is treated of in geometry. This whole distinction Berkeley proposed, not to demolish, but utterly to transform, by pointing out that universality of meaning is not primarily a peculiarity of *origin* or *structure* of ideas, but a peculiar *function* which certain ideas have acquired. That is to say,—“an idea, which, considered in itself, is particular, becomes general by being made to represent or to stand for all other particular ideas of the same sort.” Now what evidence had he to support this position? Simply the fact that after careful introspection he could discover no such general ideas as Locke or the rationalists had described. “If any man has the faculty of framing in his mind such an idea of a triangle as is here [by Locke] described, it is in vain to pretend to dispute him out of it, nor would I go about it. All I desire is that the reader would fully and certainly inform himself whether he has such an idea or no. And this, methinks, can be no hard task for anyone to perform So long as I confine my thoughts to my own ideas divested of words, I do not see how I can easily be mistaken. *The objects I consider, I clearly and adequately know. I cannot be deceived in thinking I have an idea which I have not. It is not possible for me to imagine that any of my own ideas are alike or unlike that are not truly so.*”¹ The final appeal is thus to the same authority which Descartes too recognized as supreme and infallible,—the immediate consciousness of the contents of one’s own mind.

¹*Principles of Human Knowledge*, Introduction, § 13; our italics.

It cannot be said, indeed, that Berkeley succeeds altogether in banishing intuitions from psychology. The 'notions' which he admits, and especially the notion of himself as a 'spiritual substance,' are convincing evidence to the contrary. The word 'idea' had been used by Locke to denote any content of consciousness. Berkeley restricts its application to sensations and sensation-complexes, original or revived—that is to say, to those conscious processes which, according to his view, have no reference to any reality beyond themselves. But notions have just such a reference. A spirit, whether human or divine, and the notion of this spirit, are by no means the same. The notion, therefore, aims at a universal and objective validity, which is wholly foreign to the nature of the idea. Now the notions of other spirits are arrived at inferentially, "by reason"; the notion of the self is given directly, "by inward feeling or reflexion." But "inward feeling or reflexion," in the then usual sense of the terms, could impart only a species of ideas. As the source of a notion, which refers to a reality beyond itself, it is a thinly disguised faculty of intuition.

Much the same comment is to be passed upon that mysterious faculty of comparison, which Hume's theory inherits from Locke's, and to which ideas of relations are conceived to be due,—particularly in connection with those classes of relations which are completely determined by the ideas between which they obtain; namely, resemblance, contrariety, degrees in any quality, and proportion in quantity or number. Let us ask how this complete determination of the relation is known. How do we know, for example, that the double of a number must always be its double? This is not the same as asking how we know that the one number is double the other, for that may be known in various ways, direct and indirect, and with all degrees of probability or certainty. At the same time, the answer to the former question must be included in the answer to the latter; for the relation in question is *knowable as* a necessary relation. Otherwise Hume's explanation would be obvious; namely, that the

determinate character of the relationship is not perceived in the cognition of the relationship itself, but is an induction from experience, not less doubtful than many others. But, in Hume's own language, these four kinds of relation, "depending solely upon ideas [*i. e.*, upon the ideas related] can be the objects of knowledge and certainty," and accordingly "are the foundation of science" in a sense to which no induction from experience can pretend.¹ We submit that this means, and can only mean, that in the act of comparison from which the idea of the relation is derived, there is involved an *intuition* of the determinateness of the relation.

This, however, is a digression. What we wish particularly to make clear is, not that Berkeley or Hume retained elements of intuitionism in their systems, but the far more important fact, that intuitionism and empiricism have a common principle in their acceptance of a direct and infallible perception of truth. That in comparison with this fundamental dogma the differences between the two great schools sink into comparative insignificance, will, we trust, become increasingly apparent through the discussions of the following chapters.

¹*Treatise of Human Nature*, Book I, Part III, Section 1.

CHAPTER III

THE COMMON BASIS OF EMPIRICISM AND RATIONALISM

II. THE SIMPLICITY OF ELEMENTS AND THE EXTERNALITY OF RELATIONS

The *possibility of an ultimate analysis*, or, in other words, the existence of absolutely simple elements, is a common postulate of both the rationalistic and the empiricistic systems. The nature of the analysis to which the possibility of completion is ascribed, is ostensibly different in the two cases. In both, indeed, it is a process of explanation, an exhibition of the true inwardness of that which has been accepted as a rough and ready whole. But for rationalism this must be a definition (or demonstration) of universals; for empiricism it must be a dissection of individuals. For the former it is a discovery of logical presuppositions; for the latter it is a discovery of psychological structure. And the ultimate elements to which the one analysis leads are simple conceptions and simple judgments; while the elements which the other contemplates are simple sensations. The contrast is glaring enough. But that there is, nevertheless, an important identity underlying the two positions can, we believe, be made equally evident.

Let us observe the logical connection between this assumption of the simple, and other characteristic dogmas of rationalism and empiricism.

The connection with the intuitionistic feature of rationalism is certainly close. On the one hand, it is as a guarantee of the truth of the indefinable and the indemonstrable—of that residuum left by the explanatory process, which baffles further effort at reduction—that the faculty of intuition is invoked. On the other hand, by reason of the very directness of the cognitive act and the very immediacy with which its objects are presented, the intuitive concept can scarcely admit of explanation. At any

rate, we find that in Descartes's methodology simplicity is not so much used as a mark for the distinguishing of intuitions—perhaps that would have made the intuitionistic theory too palpably a stop-gap—as the clearness and distinctness of intuitional cognition are regarded as ensuring the simplicity of its content. For, in the first place, “whatever is more simple is whatever is more easy to comprehend, and what we might make use of in the solution of problems;” and, in the second place, “it is to be observed . . . that there are a few necessary elements that we perceive by themselves, independently of all others, I do not say at first, but by the aid of experience and the light that is in us. Also I say that it is necessary to observe these with care; for it is these which we call the most simple of each series.”¹ And again: “Considering here things merely in their relation to our intelligence, we shall call simple those only the notion of which is *so clear and so distinct that* the mind cannot divide it into other notions still more simple.”²

Simplicity, relative or absolute, thus means for rationalism *logical priority*. Now let it be recalled that according to this view the order of logical priority is irreversible; that in the system of science every inferred truth owes its whole certainty to its premises without contributing anything to theirs; and that accordingly the knowledge of a conclusion is impossible except upon the basis of its own proper premises. This now means that the knowledge of the complex somehow *contains* the knowledge of its constituent simple elements—even though these latter may never have attracted attention. “Thus I can know a triangle without ever having noticed that this knowledge contains that of the angle, the line, the number three, figure, extension, etc.; which does not prevent our saying that the nature of the triangle is a compound of all these natures and that they are *better known than the triangle*, since they are what are comprised in it.”³ We know

¹*Rules for the Direction of the Mind*, VI. Torrey, *Philosophy of Descartes*, pp. 74, 76.

²*Ibid.*, XII; Torrey, p. 98; italics ours.

³*Ibid.*, XII; Torrey, p. 101; italics ours. So Spinoza holds that, if we have

all the simple natures absolutely; but evidently we may know them without knowing that we know. After what fashion, then, do we possess this knowledge? Exactly as we retain in memory anything which lies for the moment without the field of reflective attention. Even the mind of the unborn child, if it were freed from the all-engrossing impressions of pain, pleasure, warmth, etc., would find within itself the ideas of all self-evident truths.¹ To be a rational creature at all is to possess these ideas; and the act of intuition by which they are acquired proves to be only an act of *attention* to the permanent contents of the thinking faculty.

From this point of view the necessity of postulating an absolute limit to the process of explanation becomes quite evident. For without it such knowledge as the rationalist requires would be virtually impossible—possible, perhaps, in the sense of existing in the unfathomable depths of the mind, but not capable of being brought to clearness and distinctness before the attentive consciousness. For an idea's being distinct (or adequate) means that the entire content is perfectly manifest; and the range of attention cannot embrace an infinite content. This applies both to the process of definition and to that of demonstration. With respect to the latter the case can be put even more strongly. If the knowledge of a demonstrable truth presupposes the knowledge of its grounds, and the knowledge of these grounds (if they be not ultimate) presupposes in turn the knowledge of their grounds, the series of grounds and consequents cannot possibly be an infinite one. For suppose the knowledge of the demonstrable truth *A is B* presupposes the knowledge of *C is D*. Then the former truth is capable of being expressed in the form of a syllogism: *If C is D, A is B; but C is D; therefore A is B*. Now if *C is D* is capable of similar expansion, and the process is conceived any knowledge at all, God is better known to us than anything else. For though one cannot reason from the nature of anything else to the divine nature—that would be to ascend through the scale from effect to cause, which is impossible—yet the fact that one knows anything at all implies that he must already have an adequate notion of God.

¹*Reply to Hyperaspistes*; translated in Torrey, *Philosophy of Descartes*, p. 128, n

to be repeated *ad infinitum*, nothing remains of the categorical proposition, from which we started, save an endless chain of if's; and no reason appears for supposing that the proposition *A is not B*, depending upon a similar infinite chain of antecedents, may not have equal claim to truth. Moreover, if there be no ultimate truths, we cannot even be certain of the *implication* of *A is B*, in *C is D*. For if the fact of this implication is demonstrable, it too dissolves into an endless series of conditions which cannot serve to exclude the validity of a similar series leading to the absence of such implication.

Such, then, is the relation between the assumption of the existence of simple elements of thought and the general scheme of rationalism. How does the case stand on the side of empiricism? Very similarly. Here, it will be remembered, psychological introspection has been made the organ of philosophy, and has been qualified as an infallible source of truth—truth, to be sure, which is limited in its scope to the enumeration of the actual contents of consciousness. But if such enumeration is to be worth anything as unquestionable knowledge, it must, at least for some small portion of the field of consciousness, declare precisely what it contains; and this can be done with entire satisfactoriness only if there exist ultimate elements in terms of which the enumeration can be made. For, with regard to any complex factor which might be named in the description, it may always be doubted whether its identification has depended upon the particular elements which it contains, or, perhaps, upon a characteristic arrangement of elements which in themselves are by no means determinate—or, again, whether similarity of meaning may not have been taken for identity of structural contents. Let it be remembered, in this connection, that for the empiricist structure and function are absolutely disparate orders of facts; and that since the structure alone of an idea can be given by an introspection that declares *what is there* and *what is not there*, all function, and accordingly all meaning, belongs to the problematical and the obscure—to that which must be explained, and not that in terms of which explanation is to be given.

Moreover, just as the intuition of the rationalist creates nothing, but is merely a direction of attention to what was already present implicitly; so the infallible introspection of the empiricist adds nothing, changes nothing, in the complex which it analyzes, but simply emphasizes successively the elements which there existed in combination. Each element, so far as its own nature is concerned, is precisely the same in and out of the combination; otherwise the analysis would be of questionable validity. Such change as it may appear to undergo is wholly to be ascribed to our shifting attention.

We shall return to this subject very shortly. Here we are concerned to show its relation to the empiricist criterion of simplicity. A remarkable passage occurring in Hume's criticism of the doctrine of abstract ideas—the absurdity of which lies in the fact that they exceed the limits of possible simplicity—will serve to illustrate the point. "We have observed, that whatever objects are different are distinguishable, and that whatever objects are distinguishable are separable by the thought and imagination. And we may here add, that these propositions are equally true in the *inverse*, and that whatever objects are separable are also distinguishable, and that whatever objects are distinguishable are also different. For how is it possible we can separate what is not distinguishable, or distinguish what is not different? In order therefore to know, whether abstraction implies a separation, we need only consider it in this view, and examine, whether all the circumstances, which we abstract from in our general ideas, be such as are distinguishable and different from those, which we retain as essential parts of them. But 'tis evident at first sight, that the precise length of a line is not different nor distinguishable from the line itself [*i e.*, as the preceding sentence shows, *from the essential parts of the line itself*]; nor the precise degree of any quality from the quality. These ideas, therefore, admit no more of separation than they do of distinction and difference."¹ If for the twentieth century reader these words need any commen-

¹*Treatise of Human Nature*, Book I, Part I, Section 7.

tary, it is that attention may be called to the fact, that 'different' here denotes a *numerical* difference (not a difference *in kind*), and that 'distinguishable' accordingly means *recognizable as numerically different*; while 'separable' refers to the "liberty of the imagination to transpose and change its ideas." Of the three terms, therefore, 'different' applies to the simple ideas as they are in themselves, 'distinguishable' applies to them as objects of attention, and 'separable' applies to them as subject to the caprice of imagination. That the separable is distinguishable, and the distinguishable different, may therefore be regarded as analytical propositions; and Hume rightly regards them as sufficiently proved by the mere challenge to conceive the facts otherwise. But that the different must be distinguishable and the distinguishable separable are characteristic dogmas of the empiricistic system, proceeding directly from the conception of psychological elements, and thus indirectly (as we have tried to show) from the doctrine of the certainty of immediate experience. Upon this point the following passage in Hume's chapter on memory and imagination is curiously illuminating. "Nor will this liberty of the fancy appear strange, when we consider, that all our ideas are copied from our impressions, and that there are not any two impressions which are perfectly inseparable. *Not to mention, that this is an evident consequence of the division of ideas into simple and complex.*"¹

We may add that from the logical point of view the psychological element may be indefinitely complex. That is to say, it may enter into a variety of relations of resemblance, and may be classified accordingly; and in this way it is capable of receiving different predicates and hence of acquiring an extensive meaning. Thus one elementary sound may resemble certain others in pitch, others in duration, and yet others in intensity; and hence may be regarded as a middle C, as a half-note, and as *fortissimo*. The distinction between these predicates is thus at bottom a distinction between the different relations of resemblance into which

¹*Op. cit.*, Book I, Part I, Section 3; our italics.

the simple idea enters, and is not supposed in the least to affect the absolute simplicity of the idea as an existential unit.

The doctrine of the *externality of relations* has been repeatedly foreshadowed in these last pages. The recognition of ultimate elements, of whatever sort, implies that these elements have in themselves a character, which is independent of the mutual relations into which the processes of combination bring them; so that in contrast to the inner nature of the separate elements the relations may be properly described as unessential, or external. Such is conceived to be the case with the relation into which the straight line and the number three are brought in the concept of the triangle; and such is similarly the case with the relation into which two musical notes are brought when they become parts of a single chord. For since—to take the latter example—the notes in their elementary character are the same in and out of the chord, the relation which they sustain is no true part or property of either of the two. Furthermore, if we consider a relation between complex terms, what each term is in its own nature must obviously be determined by what it contains; that is to say, by the nature of its elementary constituents, together with the relations between these constituents which make up its own structure. The larger relation of which it is a term must be as absolutely external to it, as the internal structural relations are to its ultimate elements.

However, the externality of relations is a doctrine too plausible on its own account to depend wholly upon such support. The very notion of a relation—common sense will say—is of something extending between distinct terms, with which it is no more to be confounded than they are with each other. The supreme paradox of a term ‘constituted by its relations,’ or of a ‘system of relations in which nothing is related,’ was not then familiar to philosophers; but it would have been explained as only more extensive, not more inherently ridiculous, than the initial absurdity of a relation which affects or modifies its terms.

But with all its plausibility the doctrine of externality is exceedingly close to another which is shocking to common sense, and into which the former shows a constant tendency to transform itself; the theory, namely, that relations are *unreal*. The reason for this tendency is apparent. All relations whatsoever would seem to be external to the simple elements of which all reality consists. It may be suggested—and in recent times the suggestion has seriously been made—that some relations, at least, are themselves simple elements of reality, as underivable and as unquestionable as the terms between which they subsist. But a simple relation, existing independently of any and all terms, appeared to the old dogmatists to be a mere absurdity; so that this mode of escape was not open to them. To what new difficulties it might have led, the example of Kant will perhaps teach us. For the present it will suffice for us to note that neither rationalism nor empiricism is able, when pressed, to vindicate the reality of relations—nor greatly cares to do so.

In the general degradation of relations to the merely phenomenal, there is one, at least, which for rationalism remains sacred and unassailable; namely, the logical relation of *intensive inclusion*.¹ While, therefore, each concept signifies only the essence of its object as unaffected by all relations to other objects—while, to take a famous example, the concept *wax* signifies what wax is universally, regardless of its behavior toward other things in the world, and the concept *fire* contains no reference to the influence of fire upon wax or wood or gunpowder—still, where one concept includes another, a real relation subsists between them. Thus both *fire* and *wax* include in their connotation the less intensive concept, *mode of extension*.

The ground for the exception is not far to seek. This relation is the one among all others which may reasonably be said *not* to be external, at least to the more intensive concept. For the relation expresses the real essence of the concept, which is the

¹In which the definition of the one term includes the other; as with *insect* and *anima*'.

inclusion in its meaning of such and such more general concepts. And furthermore we can see how the explanation can be made, that, properly speaking, this is no relation (between two distinct terms) at all, but simply the identity of the included concept in and out of its particular setting. In like manner, we may add, the only reasonable inference from premises to a conclusion must have the form: *A includes B, B includes C, therefore A includes C*; the justification of the procedure consisting in the recognition of the identity of *C* in itself considered, with *C* as an element in *B*, whether, again, the latter be considered apart or as an element in *A*. (So also, if the two premises and the conclusion be regarded as concepts, the fact that the former, taken together, imply the latter, is to be explained by the fact that the meaning of the latter is contained in the joint content of the former.)

But it is obvious that the relation of inclusion cannot obtain between simple concepts; and the question becomes urgent, how the rationalist can save his world from falling apart into a chaos of disconnected elements. For the older rationalists (of whom Descartes is here typical), an answer is to be found in the fact that they really postulate two distinct classes of elements, namely, indefinable concepts and indemonstrable judgments, each of which is simple in its own sense, and each of which serves as a bond of connection for the other. The elementary judgments contain the elementary concepts in (or as) their terms; and the same terms occurring in several judgments unite them into syllogisms.

Now it seems clear that if the judgments are to do their part in the matter they cannot be merely analytical; that is to say, their predicates cannot be contained in the content of their subjects. They must be strictly *synthetical*. But here, as time went on, scepticism found an entrance. Does intuition ever vouch for the truth of a synthetical judgment? Descartes, indeed, declares so; but others have denied the self-evidence of every one of the examples which he adduces. Is not science thus brought into a perilous condition—to depend for its first principles upon

the mere word of contradicted witnesses?¹ Moreover, if we ask why demonstration is ever required for any judgment whatsoever—why a ground must be sought for the predicated connection of its terms—is it not because the judgment as it stands *appears* to be synthetical and cannot be left so? In a word, is not every synthetical judgment a standing *problem*? So Leibniz believed; and accordingly he sought to reduce even the axioms of Euclid to analytical form. Thus intuitionistic rationalism assumes a position substantially identical (despite Leibniz's protest) with that of nominalistic Hobbianism; namely, that all science must be deduced from definitions. But while thus gaining a certain self-consistency, it is lost in that hopeless unproductivity from which Descartes, by means of the assumption of distinct axioms, had sought to save it.

It has been suggested that a final means of synthesis is to be found in the judgment which denies a simple concept of its negative; as, for example, *What is unextended is not extended*. Here we remark that Descartes is correct in assuming that the negative of a simple concept, if it be itself a concept at all, must also be a simple concept. For since all definition is by means of genus and differentia, the negative is not definable in terms of the positive—as, for example, non-extension is not a species of extension. And if it be suggested that the negative is in every case a species of non-existence, the reply follows, that the positive is then equally a species of existence, and hence equally complex. If, then, *unextended* is a concept at all, *The unextended is not extended* is a synthetic judgment; and as such it would appear to be open to much the same criticisms as other supposedly elementary synthetic judgments. Suppose, however, it be said—as Des-

¹ Cf. Hobbes's criticism of the *clare et distincte* (quoted by Mr. Mahaffy): "This way of speaking, a great clearness in the understanding (as a test of truth), is metaphorical, and therefore not fitted for an argument; for whenever a man feels no doubt at all he will pretend to this clearness." Cf. also Kant's explanation of the necessity for a critical deduction of *a priori* principles,—“without it, our assertion might be suspected of being purely gratuitous.” *Critique of Pure Reason, Analytic of Principles*, Chap. II.

cartes does say¹—that while, as ideas, both positive and negative are equally elementary, nevertheless the one denotes a reality of which the other denotes the privation. Then, if this be supposed to be the ground of the negative judgment, we have the paradox of two concepts, in themselves utterly indifferent to each other, held asunder in thought by a characteristic of reality *which is known only through the concepts themselves*.

From the point of view which these reflections indicate, and which, while it belonged to neither Leibniz nor Spinoza, probably represents the real drift of opinion of both,—leaving aside the question whether any simple negative concepts actually exist,² it is clear that no simple positive concept can be universally affirmed or denied of any other. On the other hand, there is nothing to prevent any two simple positive concepts, or, indeed, all such concepts, from being predicates of one all-comprehensive concept whose connotation includes them all. This concept, because it can be included in no more intensive one, can never be a predicate. Now this was the ancient meaning of the term *substance* (that which in judgment must always be subject and never predicate); and it is connected with the modern meaning (the eternally existent) by the simple reflection, that since no simple predicate can be denied of it, it contains all possible reality. As predicates of substance, the simple positive ideas are called *attributes*. Now because any substance must contain every possible attribute, Spinoza concludes that there can be but one substance (“All determination is negation”); while Leibniz, reflecting that an identical quality can exist in any number of *degrees*, finds room for an infinite number of substances possessing the same attributes in different degrees, one alone (God) possessing them absolutely, or in an infinite degree.

Thus, as the system works itself out, rationalism conceives the

¹*Rules for the Direction of the Mind*, XII. Torrey, *Philosophy of Descartes*, p. 99.

²The solution of this question clearly depends upon the further inquiry, whether contradictory concepts imply a genus of which they are alike members. This is, by the way, a formal aspect of Hegel's famous discussion of *being* and *naught*; which are conceived, as he says, as simple contradictories, and yet have no higher genus within which they may be distinguished.

real world as expressed in a hierarchy of concepts related only through intensive inclusion, and all converging in one supreme concept whose definition comprehends within itself every necessary truth. Corresponding to this logical hierarchy is the ontological hierarchy of causes and effects. The logical relation and the causal relation are identical. The cause includes the effect in precisely the same way in which the richer concept includes the poorer. The supreme cause is God, in whom, as the sum of all positive predicates, all possible combinations of reality are grounded.

We cannot forbear noting that in Spinoza (and to a lesser degree in other rationalists) this mode of thinking is curiously mixed with another, inherited from neo-Platonism, and commonly called *mysticism*. According to this theory, the supreme concept in which all others are implicit is so far from being the most intensive of all concepts, that it is the least intensive—the *summum genus*. To this concept the name of God is ascribed; and he is regarded as the ultimate cause of which all specific realities are but particular effects. The commixture of rationalism with mysticism—whole heavens asunder, as they logically are—is probably due to a very ancient misconception with regard to the processes of definition and demonstration. Definition, it is said, must always be in terms of the higher, that is, the more general and less intensive; and demonstration likewise must be founded upon premises of greater and greater generality. But it is forgotten that though each element of the predicate of the definition is more general than the concept defined, the predicate as a whole is not; and that while one of the premises leading to a conclusion must be more general than the conclusion, the premises together are not. Now it has been customary, on various accounts, to regard the predicate of a definition as falling into two distinct parts, the genus and the specific difference; and it has been found convenient that the difference shall be a simple concept, all the complex remainder of the content of the subject falling within the genus. For the further elucidation of the

subject, the genus must next be resolved into a higher genus and a new difference, and this genus again into a still higher genus and yet another difference; and so on, until a highest genus is reached which is incapable of further analysis and thus marks the limit of the process. But it has frequently been forgotten that in each definition any single element of the subject may be chosen as difference, the whole remainder then standing as genus; or, in other words, that in the process of successive definition by which a complex concept is explained, no one order in which the elements shall be added in is predetermined. Every simple concept is thus a *summum genus*. But when a certain order of definition has for any reason become regarded as necessary, the successive genera are naturally viewed as presupposing each other in the given order; the equal significance of the differences is forgotten; and the *summum genus* is regarded as the source and cause of the whole series. To put the matter differently, the *summum genus* is regarded as being a simple concept in another sense than the various differences. It is capable of being thought by itself, while they are incapable of being thought except as its limitations or determinations. They are aspects of concepts, but not themselves concepts. The *summum genus* alone expresses the essence of self-subsistent reality; it alone is true Being, the being both of itself and of all things else; and hence all its species must be regarded as particular manifestations to which it *determines itself*—for there is no other Being to determine it.

Let this brief account of the mystic logic be taken parenthetically. It lies outside the proper field of our inquiry, and is inserted only to prevent misunderstanding. For a clear and striking contrast of the two mental attitudes, compare the following quotations, from Descartes and Spinoza respectively. "We say, in the third place, that these simple elements are all known by themselves."¹ "By *substance*, I mean that which is in itself, and is conceived through itself: in other words, that of which a conception can be formed independently of any other conception."²

¹ *Rules for the Direction of the Mind*, XII; Totrey, *op. cit.*, p. 99.

² *Ethics*, Book I, Def. III; Elwes tr.

According to the latter, substance is clearly the only simple concept. But in one of Spinoza's letters to Oldenburg the very same definition is applied to *attribute*. "You must observe that by attribute I mean everything, which is conceived through itself and in itself, so that the conception of it does not involve the conception of anything else. For instance, extension is conceived through itself and in itself, but motion is not."¹ The tremendous gap between the two standpoints is covered by the much discussed but perhaps inexplicable formula: "By *attribute*, I mean that which the intellect perceives as constituting the essence of substance."²

So much, then, by way of parenthesis. We turn now to other considerations connected with the general doctrine of the externality, and implied unreality, of relations.

In the mind of the rationalist, this scepticism of the relation had much to do with the persistence of that gap, which, as has been pointed out, ever lay for him between the universal and the particular, the necessary and the contingent. This becomes most strikingly evident when we inquire into the grounds of his rejection of the senses as evidence of reality; for, in a word, it is the *relativity* of sense-perception that is for him its fatal weakness. There is a remarkable passage in Descartes's second *Meditation*, which may be taken as illustrative of the common attitude of the whole school. In this passage he proposes the examination of a piece of wax in order to ascertain what we can really be said to know about it. Apparently we know it through our senses as white, hard, cold, fragrant, etc. But change its surroundings, place it near the fire, and all this changes. It loses its color and fragrance, and becomes a shapeless mass of soft, warm substance. Yet, although it loses every quality which we observe in it, we do not hesitate to call it the *same* wax. These sense-qualities, then, which change with change of conditions, and *hence are*

¹Letter II.

²*Ethics*, Book I, Def. IV. For specific illustration of the difficulties inherent in Spinoza's double standpoint, see Tschirnhausen's last letter to Spinoza, with the latter's reply.

merely relative, do not really belong to the wax. They are not essential to it. If we would discover the real nature of wax, we must look to some other source than sense-perception, for its real nature is just what remains constant through all changes and in all relations. This nature, of course, is given only in the concept of wax as a modification of extended substance. Now what we thus find to be true of the wax is true of the whole world of sense-perception. However far we go in our observations, we find only a multiplicity of particular qualities which are never fixed but always changing and relative. But the real world, in the thought of the rationalist, is the unity which underlies this multiplicity, which is not subject to change, and to which all relations are external. It is the world of conceptual universals—the world of reason, as opposed to the world of sense. In a secondary sense, the world of particulars may, indeed, be said to be real, since it must have substance, the eternally existent, for its ground; and its illusoriness vanishes in so far as we can exhibit it as thus grounded. But this is just the task of reason,—to seek the ground; and rational knowledge is precisely the knowledge of things as grounded.

How, then, are the two functions of rational thought and sense-perception connected? Or, ontologically stated, how is the world of the particular and the contingent related to the world of conceptual universals? While rational concepts may, in some sense, form a logical system among themselves, culminating in the concept of substance, what way is there of getting out of the system to the particulars of sense-perception? All that we learn from perception is the changing qualities and relations of particular objects. Sense is utterly incompetent to reveal the universal. We may know through the understanding that wax is a modification of extended substance; but how are we to identify this particular piece of hard, white, fragrant material, which melts when near the fire, *as* such a modification of extended substance? We may assume that the concept *wax* is a true predicate of all particular pieces of wax; but if these particular pieces, so far as particular,

are wholly constituted by fragrance, whiteness, etc., and relations with particular fires, etc., then to predicate *wax* of the thing is an absolutely unmotivated procedure. The very fact that definition simply adds one universal to another, makes it impossible to pass logically from any concept, however low in the hierarchy it may be, to the particular. If reason deals only with the universal, and the senses yield only the particular, the two worlds must remain absolutely unrelated.

To put the difficulty in perhaps clearer form, we may say that the observations of sense-perceptions are invariably expressible as particular judgments, such as, *This wax is white*, or, *The fire is hot*, or again, *The wax melts now that it is near the fire*. These judgments are existential in the sense that they imply the existence of their subjects; they are contingent, inasmuch as no necessary ground for their truth is given; and, as merely contingent, and hence not invariably true, they convey no information about reality. They are not, properly speaking, knowledge at all, and cannot become such unless they can be shown to be the necessary outcome of the real nature of things. For example, the fact of the melting of a piece of wax when heated becomes knowledge only when it is shown to be the necessary result of the universal nature of wax so to act under such circumstances. But how is this to be accomplished?

Furthermore, those subordinate universal judgments, from which the contingent truths of sense are conceived more directly to spring, must themselves be established as valid. For instance, the law that all wax melts when heated demands explanation—as a result, let us say, of the specific constitution of wax. For such a law is obviously conditional in its significance; it is the expression of a relation between possible contingencies; and consequently it cannot describe the ultimate nature of reality. The statement of a relation, to become truth, must be seen to spring from the attributes of substance itself. The conditional proposition must be deduced from some final necessary truth which is at once universal and existential. This truth must be universal,

since particulars cannot serve to establish universality. It must be existential, since the whole series of conditions must have some starting point in real existence. The only judgment that can meet these requirements is, of course, the definition of the highest concept,—a definition, which, as the ontological proof is supposed to show, contains existence as an essential predicate. While every other concept may be defined without reference to its existence, the very definition of substance posits its existence.

Now let us suppose that from this first principle the whole system of universal truths has been deduced. The problem still remains, how the rationalist shall unite the mass of particular contingent propositions with this system—how, for example, he is to establish deductively the fact that *this wax is white*. He has deduced, let us say, the universal, *All wax is white*, or (in conditional form), *If wax, then whiteness*; but how shall he deduce the existence of this particular bit of wax. For according to the logic of rationalism the existence of particular objects is a fact altogether irrelevant to the laws of their action.¹ It may even be questioned whether the statement of their existence has any meaning for him. *The wax*, we say, *exists*. But the very terms of which the proposition is composed have their meaning wholly exhausted in relations—the determinate variation of the sensible qualities of the wax, its modes of behavior under various conditions. Abstracted from these relations, the existence of the wax reduces to that of a portion of extended substance, which we have no sufficient means of distinguishing from any other portion. It seems as if the union of essence and existence in the definition of the highest concept served only to make ultimate the breach between essence and existence elsewhere.

But what of the assumption, that the system of universal truths is deducible from its first principle? This is, of course, a mere postulate of the rationalistic logic—its verification is not

¹Cf. Leibniz's recognition of this difficulty in his distinction between *truths of reason* and *truths of fact*. The latter are, indeed, as he holds, demonstrable from the former; but only by an infinite process of deduction, which can be accomplished only in the divine consciousness.

only unaccomplished, but indefinitely exceeds human powers. In the actual progress of his scientific work, the rationalist cannot fail to verify the aphorism of Bacon: "The syllogism is not applied to the first principles of science, and is applied in vain to intermediate laws, being no match for the subtlety of nature."¹ Consider, for example, the testimony of Descartes: "Afterwards when I wished to descend to the more particular, so many diverse objects presented themselves to me, that I believed it to be impossible for the human mind to distinguish the forms or species of bodies that are upon the earth, from an infinity of others which might have been . . . unless we rise to causes through their effects, and avail ourselves of many particular experiments." In this way, he says, he had never failed to find a satisfactory explanation of any phenomenon, on the basis of his already deduced principles. "But it is necessary also to confess that the power of nature is so ample and vast, and these [already deduced] principles so simple and general, that I have hardly observed a single particular effect which I cannot at once recognize as capable of being deduced in many different modes from the principles, and that my greatest difficulty usually is to discover in which of these modes the effect is dependent upon them; for out of this difficulty I cannot otherwise extricate myself than by again seeking certain experiments, which may be such that their result is not the same, if it is in one of these modes that we must explain it, as it would be if it were to be explained in the other."² Perhaps the most significant feature of this confession is Descartes's embarrassment at finding several possible explanations of a phenomenon. For since explanation is deduction, a *possible* explanation is an *actual* one—and what geometrician was ever embarrassed by the discovery of several proofs for a theorem, or of several solutions for a problem? Such embarrassment can only mean that the alternative explanations depend upon anterior principles which are mutually exclusive, but between which the investigator has not yet been able to decide; or, to put the matter squarely, that an

¹*Novum Organum*, Book I, § 13.

²*Discourse on Method*, Part VI.

uncrossed gap still remains between the truths of reason and the generalizations based upon experiment.

Can we go further and say that the rationalistic deduction is not only indefinitely far from accomplishment, but essentially impossible? Perhaps not; for the simple reason, that whenever a law is shown to be indemonstrable from an existing set of axioms, the rationalist may be expected simply to claim it as an additional axiom. At the same time, the prospect of such procedure on his part has a fatal effect upon the *convincing power* of his system. Axioms are supposed to be derived, not from the exigencies of the demonstrations that are founded upon them, but from the unbiased intuition of reason. A defect in the system is thus disclosed which is analogous to the initial difficulty involved in the assumption of synthetic axioms—that even if it assumed a form in which (in the existing state of the sciences) it was wholly irrefutable, it would remain powerless to convince a sceptic.

We have been led so far in the discussion of the rationalistic side of our subject that we must confine ourselves to a few words upon its empiricistic side. However, a very few will suffice. That the doctrine of the externality of relations is involved, for empiricism as well as for rationalism, in the postulate of simple elements has already been shown. That, furthermore, these presuppositions lead the empiricist unavoidably to an atomistic chaos in which all relations disappear, is practically admitted by Hume in the remarkable appendix to his *Treatise*, and it has been joyously reaffirmed by his critics ever since. We have seen that the rationalist commonly saves himself from a similar embarrassment by the assumption of synthetic axioms. It is worth while inquiring how the empiricist avoids, or at least postpones, the fatal *reductio ad absurdum*. Berkeley and Hume are here, in sharply contrasted ways, representative of their school. Each, it will be seen, calls in rationalistic principles to his aid;¹ and

¹This has already been shown for Hume in the course of our discussion of immediate experience.

Hume is further guilty of a fundamental inconsistency by which the externality of relations is denied, as well as affirmed, at the very threshold of his system.

The doctrine of the externality of relations is held by Berkeley in a form so extreme as scarcely to have a parallel. Not only have related ideas (according to him) a nature of their own, which is unaffected by their relations; but relations are of an absolutely different nature from ideas, and are cognized in an entirely different manner. There are relations between ideas; but relations are not ideas, nor are there ideas of relations. Properly speaking, we have only *notions* of relations; just as we have notions, not ideas, of substances.

The grounds upon which Berkeley bases this peculiar doctrine are interesting, though they do not particularly concern us here. Ideas, he declares, are altogether inactive entities; whereas spirits are known to us only as active, *i. e.*, as thinking, feeling, and willing. It is impossible, therefore, that an idea should in any way resemble a spirit; and hence an idea cannot represent a spirit or any of its acts. But *a relation includes an act of the mind*. Therefore there can be no ideas of relations. So much Berkeley explains to us in a sentence added to the second edition of his *Principles* (Sect. 142). It is a pity that he does not enter more fully into the matter; but it is perfectly apparent that the relations are understood to be an extraneous addition imposed by the mind upon the ideas as such. Berkeley has, however, an ulterior motive in all this—or so we suspect. He is concerned to save the demonstrative certainty of the deductive sciences; *i. e.* (for him as for Locke), mathematics and ethics. The absolute validity of moral laws in particular must not be left to mere induction founded on the observed connections between ideas. Apparently, also, he saw something of the difficulties involved in regarding relations as a class of complex ideas; for example, that if the relation be a compound of its terms it is impossible for the same terms to stand to each other in more than one relation. But if the relation be regarded as a simple idea, it becomes

portentously difficult to show how it (as a relation without specific terms) is not a mere abstract idea. So *to save the relation as an abstraction Berkeley denies that it is an idea* or knowable by means of ideas.

For Hume, however, who knows nothing of 'notions,' the Lockian classification is inevitable. Relations, like modes and substances, are a class of complex ideas. Just how they are specifically characterized is harder to make out. Hume has often been accused of verbal inconsistency—of which, like a true Baconian, he takes little account. But in this case his vacillating modes of expression seem to point to a real unclearness and inconsistency of thought, and ultimately to an untenable postulate underlying his whole treatment. In the first place, complex ideas in general are introduced to consideration as remarkable effects of the association of ideas; and it is said that they "*generally* arise from some principle of union [*i. e.*, association] among our simple ideas."¹ With two of the three classes of complex ideas this appears to be invariably the case. The idea of a substance or of a mode is a "collection of simple ideas that are united by the imagination and have a particular name assigned them," association by contiguity and causation being necessary to the first, while (presumably) either this or resemblance is necessary to the second. But a relation may arise "even upon the arbitrary union of two ideas in the fancy," "without a connecting principle." Relations, then, are not complex ideas in the sense of being products of association. What then is a relation? Hume has two answers. First, it is "that particular circumstance in which . . . we may think proper to compare" two ideas; or, "any particular subject of comparison." But, secondly, a certain example (which he cites) "will be allowed by philosophers to be a true relation, because we acquire an idea of it by the comparing of objects." Is, then, the relation the *basis* or the *product* of the process of comparison; or how, upon Hume's principles, can it be both? Again, "those qualities, which make objects admit of comparison, and

¹*Treatise of Human Nature*, Book I, Part I Section 4; italics ours.

by which the ideas of philosophical relation are produced" are properly enough "considered as the sources of all philosophical relation." But these "sources of relation" (comprised under the seven heads of resemblance, identity, etc.) are at once spoken of, and are thereafter referred to, as being themselves relations. This really amounts to saying that relations are their own sources—or that the existence and nature of relations are wholly inexplicable in empiricistic terms. Berkeley's partial intuitionism, crude as it may seem, is surely not less philosophical than this.

We have dwelt at some length upon the rationalist's inability to pass from the universal to the particular. It is notorious that the empiricist is equally unable—except by the covert addition of rationalistic principles to his own—to pass from the particular to the universal. For him, as for the rationalist, the contents of sense-perception are mere particulars; and the ascent from the contingent particulars of sense to necessary connections of ideas becomes as impossible as is the rationalist's attempt to deduce particular propositions from the body of universal truth. We may state the case in another way. The datum of knowledge which the empiricist recognizes as immediately given is in the form of individual elements. Hence all terms of thought that are not particular can be only collective. The universality of a concept can mean nothing but the inclusion of every possible particular. It could be reached only by an infinite process of summation—and this could never be completed.

Empiricism, then, starting from what seems to be a position diametrically opposed to the assumption of rationalism, runs into the same logical *cul-de-sac* in which rationalism has been found to issue. We may well ask: Is the claim that the system of rational knowledge is wholly derived from the contents of sense-perception so far removed, after all, from the contention that its source is to be found only in *a priori* intuitions of reason? It has been noted, in the first place, that both positions rest on the assumption that experience is analyzable into final elements. The futility of the empiricist's attempt to construct a system

of rational knowledge from the essentially irrational and unrelated elements of sensation has often been pointed out. But, as we have seen, this was precisely the problem which confronted the rationalist; for his logical ultimate was a bare given, as irrational and unrelated as the simple sensation. Empiricism and rationalism alike conceive the process of analysis as leading to a final goal and yielding an irreducible element. That the one conceives this ultimate as a conceptual absolute, and the other as a psychological absolute, is of minor importance. A highest concept and a simple sensation, regarded as the ultimate elements of rational experience, and united to others of their kind by no other relation than that of mere coexistence, are indistinguishable and alike meaningless.

Along with this conception of the real as constituted by ultimate elements, goes the complementary conception of relations as merely external bonds. The process of analysis, whether logical or psychological, consists essentially in stripping away these relations until the inner core is revealed. The issuance of the process in elements whose validity can be attested only by their mere immediacy is the common criterion of its success. And just as the analysis which leads to the elements is a mere denial and casting aside, so the process of synthesis can be nothing more than a bare affirmation, a joining together of the essentially unrelated. The organization of rational thought for both rationalism and empiricism is an externally imposed arrangement.

With an important reservation, to which attention will immediately be called, rationalism and empiricism may be said to agree further in the parallel treatment of logical and causal connection. Rationalism, with its carefully formulated correspondence between the ontological and logical orders, establishes the peculiar relationship by the reduction of both modes of connection to terms of intensive inclusion. Just as the essence of a thing contains its attributes and modes as effects, so the higher concepts contain the lower, and so also the premises contain the conclusion. On the side of empiricism, the association of ideas,

springing from the temporal order in which sensations are given, is the source of the causal relation; and, except for the case of demonstrative reasoning, it is the foundation of all inference. It is this, which, as Berkeley says, "gives us a sort of foresight which enables us to regulate our actions for the benefit of life." And Hume expressly holds that "the only connection or relation of objects, which can lead us beyond the immediate impressions of our memory and senses, is that of cause and effect." The basis of syllogistic inference is, of course, different. This is to be found in that extraordinary faculty of comparison which plays so great a part in the classic empiricism.

But the importance of this exception must not be exaggerated. Hume's criticism of the notion of the self, resolving it into a mere sensational complex, strikes a death-blow at the conception of an *act of the mind*. Though he himself may not admit it, the possibility of an "arbitrary union of two ideas in the fancy," "without a connecting principle," has disappeared. The faculty of comparison, like all other faculties, must be explained in terms of the natural behavior of the ideas themselves. Thus empiricism takes the form of a pure associationism—and thus the identity of the causal and the logical orders becomes complete.

CHAPTER IV

THE REPRESENTATIVE THEORY OF IDEAS

Some remarkable illustrations of the doctrines set forth in the preceding chapters are connected with the representative theory of ideas, or 'epistemological dualism,' as it has latterly been called. And so, though this theory is by no means universally accepted by the old dogmatists, we think it important to give some analysis of it, and to show its relation to rationalism and empiricism respectively. A general definition of the theory, which will apply with perfect justice to all of the various forms which it has taken, probably cannot be given. But an approximation, which will serve to introduce the present brief survey, may be based upon the following statement:

The things of which we have knowledge are not, as known, themselves present to consciousness, but are represented by ideas, with which they stand in a relation which is external to both or, at least, to the things.

By the concluding words it is implied, that, whatever the relation denoted by 'representation' may be, it neither is, nor affects, any part of the essential nature of the thing or (generally speaking) of the idea. The idea may be completely analyzed without betraying the existence of the thing; and the thing may exist in the full possession of its attributes though no idea of it ever arises. The correctness (truth, adequacy) of the idea and the 'cognizedness' of the thing are purely accidental. The words, "as known," imply that even an idea, in order to become object of knowledge, must be represented in consciousness by an idea of itself.

The simplest form of the theory, and the one from which all others are divergences, is that the idea is *like* the thing. This does not mean that the acceptance of an idea as correct is held

to imply that an actual comparison between the two has been made. On the contrary, no such comparison is believed to be possible—at least to men. Even the case of an idea of an idea is no exception. Nothing can be known except through a representative—not even a representative. The utmost that comparison can do is to equate one idea with another already accepted as correct. The meaning of the correctness therefore is that *if* (as is inconceivable) a comparison were made, the idea would be found to be like the thing.

This primitive theory is in most highly developed rationalisms recognized as out of the question; and it slips in only surreptitiously, as a relic of bygone habits of thought. In its place arises the theory, that the representation of things by ideas means—not the *resemblance* of ideas to objects, but—the *identity of the relations* between ideas with those between objects. That is to say, the world of things is supposed to form a system, which is exactly paralleled by the system of true ideas; and the correspondence of an idea to a thing means that it is related to all other true ideas precisely as the thing is related to all other things. In a previous chapter we have shown how rationalism tends to reduce all relations to the one of logical inclusion. The system of things then takes the form of a network of interlacing lines of causes and effects; and the system of ideas, one of subjects and predicates (or premises and conclusions). Among empiricists, too, the resemblance-theory cannot long maintain its ground—Berkeley's refutation of it is proof of that. As alternatives we find on the one hand a feeble reflection of the rationalistic doctrine—the theory of secondary qualities—and on the other hand, in all mature empiricisms, the rejection of the representative theory altogether. For the subjective idealism of Berkeley, by declaring that things are merely a class of ideas, amounts to a point-blank denial of the representative theory; and Hume's peculiar realism is so far in full agreement with Berkeley. For though 'images' (to use Berkeley's terminology) resemble 'real things,' and do indeed represent them in their absence, the 'real

things' are themselves directly perceived; and the 'images' can be compared with the 'real things' and thus corrected by them.

The representative theory in all its forms contains the following difficulty. On the one hand, there is nothing in the idea by which its correspondence with the thing, or even the existence of the thing, can be attested; and yet, on the other hand, it is only through the idea that the existence and nature of the thing can be known. The difficulty is evaded somewhat as follows. It is not anything *in* the idea (*i. e.*, it is no part of its logical content, or of its psychological structure) that indicates its correctness, but some character that can vary independently of the content or structure. Thus the empiricist observes that sensations (as over against the precisely similar ideas of imagination) are distinguished by a peculiar intensity, steadiness, vividness, or emotional setting, or by their direct dependence upon the sense-organs; and any or all of these may be regarded as assuring the correctness of this class of ideas. On the other hand, the rationalist, rejecting the evidence of the senses, may specify the analytical distinctness of the true ideas as the distinguishing mark. If a ground be sought for any such theory, the empiricist who maintains it can only appeal to the observed fact, that such ideas as he has named cannot be doubted. The inability to doubt may be ascribed to two causes: the fixity of the idea itself in consciousness, or the strength of the feeling of conviction which accompanies it. That a similar procedure is possible to rationalism the example of Descartes shows. With him too the inability to doubt is the ultimate proof of a true idea. His famous criterion of truth is found *inductively*—by the method of difference, in fact. Having discovered an indubitable truth, he observes in what respect this differs from all the ideas which he has previously rejected as open to question; and this difference is then the criterion. Descartes, however, adopts this position only as the point of departure from which to reach a higher one. Ultimately, as he believes, the ground of the criterion is to be found in the veracity of God. The existence of a perfect being is thus a self-

supporting truth on which all other truth depends.¹ Needless to say, this is the more characteristically rationalistic position.

The epistemological dualism of idea and *ideatum* passes over very easily into an ontological dualism of mind and matter. The ideas are regarded as modes of thinking substance, and those *ideata*, which are not themselves ideas, are regarded as modes of extended substance. This is, of course, what we find in Descartes and (substantially) in Locke. But other ontological interpretations are by no means impossible. The distinction between idea and *ideatum* may be regarded as defining, not two kinds of substance, but two kinds of existence; that is to say, a single reality may be regarded as existing both as idea and as thing—*objectively* and *subjectively*. This is the conception which underlies the ontological proof of the existence of God in its original medieval form; for the proof turns upon the principle, that, since that which exists both as idea and as thing is more perfect than that which exists as idea alone, the most perfect being cannot be conceived as having the former kind of existence alone. In the period with which we are dealing, this conception is represented by Spinoza, by whom, however, it is carried to an extreme. Not only may the same reality exist both as idea and as thing, but nothing can exist otherwise. There is but one substance, which in each of its modes exists both as idea and as thing, that is to say, in the attributes of thinking and extension. The correspondence between idea and thing is, therefore, a universal parallelism; and if, to a superficial reflection, this does not appear to be the case, that is only because ideas are confused. All error is confusion. Every distinct idea (including, of course, every simple idea) is true; and the real content of every confused idea is likewise true. Truth here means the correspondence, not of one entity with another,

¹It should be recalled that the ontological proof of the existence of God, in the form which Descartes gives it, is not a proof—that is to say, a deduction—in the ordinary sense of the term at all. It is a piece of exposition, calling attention to the fact, that the judgment that God exists is analytical and therefore requires no deduction. "Its conclusion may be known without proof by those who are free from all prejudice." Cf. Proposition I of the "geometrical" account of the proofs of God's existence, in the *Reply to the Second Objections*.

but of two indissoluble aspects of a single entity. Again, in the monadism of Leibniz, the correspondence is between the modes of each substance and the universe of substances. The pre-established harmony here takes the place of the parallelism of thought and extension; and consequently, as in Spinoza, the completely distinct idea is forthwith true. The important point for us to note is that in spite of these developments of the ontology of rationalism the epistemological dualism remains. In Spinozism the attributes of thought and extension are each absolutely primitive and independent, and there is no possibility of any essential connection. The parallel that obtains between them is only such as obtains equally between all the infinite attributes of God. At bottom it amounts to no more than their being predicates of a common subject. In the philosophy of Leibniz, the 'windowlessness' of the monads, their imperviousness to outside influence, is a fundamental dogma. The ideas of which a mind is conscious follow upon each other by a law of its own nature. The student of Leibniz is, indeed, sometimes driven to wonder how the philosopher ever convinced himself of the existence of an outside world at all.

How admirably the representative theory accords with the other characteristic doctrines of rationalism, the reader has doubtless observed. The externality of the relation between idea and thing is itself a case of the general maxim; and it further assures the externality of all other relations. For as idea and object are absolutely incomparable, the identical relations which obtain between ideas and between objects must be wholly foreign to the essence of both. Moreover the dualism of idea and *ideatum* makes the assumption of a definite stock of underived and unquestionable knowledge imperative. The rationalistic axioms and definitions serve not only to connect a variety of ideas among themselves and to support a chain of 'abstract' reasoning. The intuitions refer directly to reality; and every deductive process that starts from them maintains its reference to reality to the end. For the relations between ideas, which the judgments of science

affirm, are at the same time the relations between the corresponding things. So that, in so far as the relations are concerned—and it is only by reason of their relations that ideas represent things at all—the judgments may be said to refer to, or to represent, the things as directly as the ideas.

So long as empiricism holds to the representative theory, its point of departure is the assumption, that the thing is the source (or cause) of the perception that initially represents it in consciousness—any representation by an 'image' being due to the fact that this is a revival or copy of the perception. This assumption is as natural, as apparently inevitable, from the empirical standpoint, as the doctrine of parallelism is from the rationalistic standpoint. It will be remembered that Descartes alone among the rationalists is willing to admit a causal connection between thing and idea, and even he regards it as a mystery surpassing human understanding. But for Locke and his more direct followers the assumption is unquestionable.

Whether, then, the perception resembles the thing is a comparatively small matter. It is believed to do so in the case of sensations derived from more than one sense—also in that of solidity. The other sensations seem to be wholly different from those features of the thing which cause them to arise in us. But they represent the thing no less adequately on that account. For their representative function depends upon the axiom, that every difference between effects must be due to a difference in their causes. It is important to note that this axiom is far from justifying the inference, that all relations between ideas are identical with the relations between their objects. Indeed, the empiricists are well aware of some striking evidences to the contrary. Darkness is the absence of light; but black is not the mere absence of brightness or of color, but a peculiar positive sensation. The consequence is that a judgment, representing the relation between two ideas, cannot—however adequate the ideas may be—be understood as referring directly to things. The cleft be-

tween ideas and things is thus far deeper for dualistic empiricism than for rationalism. Locke's famous definition of knowledge is simply typical—"the perception of the agreement or disagreement of our ideas."

Certain other features of empiricism lead to a like result. In the first place, while all the simple ideas which the mind contains have been originally caused by their objects, the mind constructs out of these elements great numbers of complex ideas, that have no objective counterpart at all. Such, for example, are the conceptions of virtue and vice. These ideas are not representative of anything at all—except in so far as they are intended to resemble the similarly named ideas of other men. But, for all that, such ideas agree and disagree with one other, and the perception of the agreements and disagreements is knowledge. Thus there is knowledge that has no application outside of the sphere of the ideas themselves. In the second place, even where the complex idea is not a mere fiction, there is scarcely ever a complete certainty that a particular concrete object corresponding to it exists. The possibility of illusion or hallucination may be so slight as to be practically negligible, but it is still present. Locke, it will be remembered, recognized only two exceptions, the self and God, the former known intuitively, the latter demonstratively. In order to get in touch with reality, the empiricism that holds to the representative theory must call in rationalism to its aid.

The philosophies of Berkeley and Hume are interesting in this connection, as indications of the vain effort of empiricism to rid itself of the inconsequences of Locke's theory. Berkeley flies to two opposite extremes. So far as his 'notions' of substances and relations are concerned, his thought is a mere undeveloped rationalism. But in his identification of things with their ideas, he institutes a very different sort of speculation. In the first place, he shows the futility of the resemblance-theory of representation—the emptiness of declaring two terms similar, which according to the hypothesis cannot be compared. In the second place,

while accepting the necessity for an external cause for the idea (where it is not the work of the mind itself), he denies that there must be a distinct cause for each idea; and he urges the observable uniformity in the succession of ideas as proof that they have a common origin. The difficulty which then faces him is that of explaining, or explaining away, the universal assumption of science and common-sense, that things exist while we are not observing or thinking of them. This he declares is true as the condensed statement of the results of conditions contrary to fact. It really means only that *if* conditions were otherwise the things would be perceived. Stated categorically, it means simply that the order in which sensations come to us contains numerous uniformities; that these uniformities are not limited to the experiences of single minds, but extend from mind to mind in such fashion that the experiences of different men dovetail into each other; and that the uniformities of sensation are more or less reproduced in imagination. We have, for example, often seen wood consumed to ashes; and now, seeing similar ashes, we imagine a fire that has burnt here in our absence,—a fire which an observer would have seen, had one been present. There is no reason to assume the existence of a thing in addition to the image or percept; nor is there any sense in supposing that an idea exists elsewhere than in some consciousness.

Hume's attitude upon the matter is well expressed in a famous footnote in the *Enquiry concerning Human Understanding*.¹ Berkeley's arguments, he says, are absolutely irrefutable and utterly unconvincing. For the representative theory Hume has no manner of use. It simply doubles the problems to be solved, without lending any aid toward their solution. And Hume amplifies Berkeley's argument against it in one very important direction. Berkeley had shown that ideas could resemble nothing except other ideas. Hume, upon the basis of his theory of necessary connection, shows that ideas can be related as effects to nothing except other ideas. The last vestige of support for the

¹Section XII, Part I.

representative theory (so far as empiricism could countenance it) is thus swept away. Nevertheless Hume is not able to rest content with Berkeley's idealism. That real things, or, if you please, our impressions of sensation, do exist while we are unconscious of them, is, he declares, the universal belief of unsophisticated men—an instinctive faith which no scepticism can weaken—and a necessary assumption for the scientific explanation of the world. The mere condition contrary to fact will not suffice. The ashes are real; and to explain them a real fire is requisite. At the same time, Hume can no more than Berkeley give an intelligible meaning to the existence of a thing except as a content of consciousness, but sets it down as a sheer absurdity.

There can be little doubt, that, upon his own principles, Hume is in error in thinking this 'realistic' theory absurd. In the first place, he does not, like Berkeley, feel the need of a spiritual substance in which ideas shall inhere. To him, substances are but a class of complex ideas, and the conscious self is no exception. Instead of the self's being necessary to the existence of ideas (or sensations), the contrary is clearly the case. In the second place, there is no force in the objection, that ideas are only known to us as connected in individual 'streams of consciousness.' For each of us has direct experience of only one such stream. And if for the understanding of the world he is obliged to assume the existence of other streams of consciousness, connected with the bodies of other men and animals, and must, indeed, often ascribe to these consciousnesses elements which he himself does not possess; there is at least no *prima facie* reason why equally cogent intellectual needs should not, with perfect legitimacy, lead him to the assumption of the existence of simple or complex sensations not connected with any consciousness whatsoever. At the same time, Hume clearly underestimates the resources of Berkeley's position; and, indeed, the considerations which he advances are all answered by Berkeley in advance. That a so-called real existence should be analyzed into a relation between

ideas—the possibility of perception under supposed circumstances—may be startling to common sense, but there is nothing in it to baffle scientific acceptance.

There is, however, a very simple objection, which neither the subjective idealism of Berkeley nor Hume's modification of it can successfully meet, and which did much to block the further development of English empiricism during a full century. How can things be identified with perceptions, when the same thing can be perceived in so many ways and from so many different points of view? It is not as if the various impressions thus received were fused into a single image—as color and texture unite in the perception of a rose-leaf. They may be in the highest degree incompatible and mutually exclusive, as well as extremely different from each other. Yet they remain perceptions of the same thing. Neither Hume nor Berkeley can offer any explanation—except the denial of the fact. *So long as the perception and the thing remain identical*, a one-to-many relation between them is a manifest absurdity. The device of getting rid of epistemological dualism by equating one side of the division with a portion of the other side will not suffice.

In conclusion, we wish to remark that, while Berkeley and Hume denounce the representative theory, they in effect fall back upon its very crudest form for the conception of the relation between idea and *ideatum*. They regard it as necessarily a resemblance, and contemplate no other possibility. This is why, for example, the possibility of an idea of a spirit is rejected by Berkeley. The passive idea and the active spirit are so utterly unlike, that no possible bond of resemblance between them can subsist. This attitude on their part may be thought the more remarkable, as their investigations into general ideas had familiarized them with an altogether different type of representation,—that of ideas by words; and Berkeley had particularly noted the analogy between the signification of words and the visual perception of distance. The strain of eye-convergence means

nearness, not because it resembles it in any way, but because it has been constantly associated with it. But representation such as this means simply the ability to suggest, arising from previous association. The thing must first be represented by its ideacopy, before the suggestion of that copy by an associated idea is possible.

PART II
REVOLUTION AND REACTION

CHAPTER I

THE CRITICAL PHILOSOPHY

After the successful carrying-out of a revolution, our wonder may be less excited by the greatness than by the limitedness of the changes that have been effected. Looking beneath the altered surface of things, we find a scarcely modified substratum, which bears witness to an unbroken historical continuity. Very notably is this the case with the more important revolutions in philosophical thought. It is notorious, for example, that the founders of modern philosophy, with all their contempt of scholasticism, were never able to free themselves from its most characteristic concepts—nay, never awoke to their bondage to them. Very similar is the relation which the critical philosophy bears to its forerunners, rationalism and empiricism. The ‘Copernican hypothesis’ of Kant, despite its magnificent daring, meant no such absolute shift of the center of vision as its author supposed. On the contrary, nothing is more apparent to the reflective student than the far-reaching identity of the fundamental logical conceptions of Kantian and pre-Kantian thought. Indeed, it may safely be asserted, that there is not a single one of the doctrines which we have pointed out as characteristic of the old dogmatism, that is not to be found, either openly expressed or implicitly accepted, in the writings of Kant. And yet is it none the less true, that in the critical philosophy a transformation of the traditional logic is involved.

So far as it is possible to regard this transformation as due to a single revolutionary idea, it may be described as having its source in a new conception of the nature of truth and validity. As conceived by rationalism, the warrant for the truth of any proposition could be exhibited only by deducing it from some more general proposition, whose truth in turn must be attested by

some wider principle, the series of premises necessarily resting upon some ultimate proposition or propositions, for whose truth no other ground could exist beyond their own immediate clearness. This conception of the nature of validity and of rational procedure, as we have already pointed out, was made inevitable for rationalism by the representative theory of ideas. Just because the truth of ideas consisted in their correspondence to the reality which they represented, there could, in the last resort, be no test of truth except intuition.

Now, so far as his ideal of scientific procedure went, Kant was a thoroughgoing rationalist. He was not—as he remarks in the preface to the second edition of the *Critique of Pure Reason*—opposed to the dogmatical procedure of reason, since science must always derive its proofs from pure principles *a priori*. It is only necessary to inquire in what way, and by what right, reason has become possessed of such principles. Mathematics typified in his mind, as in Descartes's, the ideal of scientific method; and this ideal was further confirmed by the recent development of mathematical physics. The fact of the existence of a body of *a priori* judgments he assumed without question. Profoundly as Kant was stirred by the analysis of Hume, Hume's scepticism left him untouched. Human knowledge is—so he believed—unassailably founded on universal and necessary truths.

As to the character of these truths, however, Kant had become convinced that the *a priori* premises on which the sciences are founded must be synthetic propositions. It will be remembered that this was a question on which rationalists had not been agreed. Descartes, to whom the issue had not clearly presented itself, admitted both analytic and synthetic propositions among intuitive truths. Spinoza, too, had included synthetic propositions as axioms among the first principles of his system. Hobbes and Leibniz, however, had, for differing reasons, made the attempt to base deductive science solely on definitions. Now it was evident to Kant, that this latter procedure was impossible. From

analytic propositions alone no new truths could be deduced. They can, as Kant remarks, serve only "to form the chain of the method, and not as principles." Furthermore, not only did he recognize that metaphysics and natural science contained synthetic principles, but he was equally convinced that geometry and even arithmetic were based upon such principles. Now the mathematical sciences were the only ones to which Hume had allowed demonstrative certainty, as being based upon the direct comparison of ideas—all judgments involving the notion of cause being only of various degrees of probability or 'moral' certainty. But Kant found that Hume's criticism of the causal relation turned upon its synthetic character; so that, although Hume himself had never formulated the distinction between analytic and synthetic judgments—and, indeed, the distinction is wholly foreign to his thought—his criticism needed only to be generalized in order to apply with equal cogency to the principles of mathematics.¹ It was in this way that Kant's reading of Hume reacted so sharply upon his inbred rationalism. It brought into relief the fundamental difficulty of rationalism and empiricism alike: What warrant can exist for universal relations between terms essentially disparate?

It was, then, with a clear recognition of this difficulty, that Kant was led to formulate the problem, *How are synthetic judgments a priori possible?* And yet, despite this insight, he failed to realize that a solution of the problem must involve a transformation of the whole scheme of rationalistic logic. His purpose was not to destroy but to fulfill rationalism.

The solution which Kant believed himself to have discovered lies in the fact, that *a priori* principles are the indispensable conditions of the unity of experience. They are *a priori*, *i. e.*, immediately certain and logically independent of all other knowl-

¹As an indication of Kant's rationalistic bias, we may cite the remark (in the Introduction to the *Critique of Pure Reason*, 2d ed.), that if Hume *had* thus generalized his criticism, his good sense must have forced him to reject both the logical consequences of the criticism and the fundamental premises from which they were drawn

edge, precisely because they are involved in every possible bit of empirical knowledge. Their necessity lies in the *indispensability of the function* which they perform in experience. If it is their universality which serves as the basis of all valid knowledge, they themselves are reciprocally justified by the whole system of experience. All this implies unmistakably an important limitation upon the dogmatic conception of irreversible logical priority. This appears in the fact, that, as a consequence of the Kantian treatment of the *a priori* as the form of thought, its legitimate application must be restricted within the limits of possible experience. That is to say, *a priori* principles are not true in that they severally and independently correspond to reality, else a limitation upon them would be unthinkable. A type of truth thus emerges in the critical philosophy, which is not conceived as a relation between the world of thoughts, on the one hand, and a world of reality, on the other. This new truth is a concept which, like any of the categories, is itself applicable only within experience. Moreover, the truth of the *a priori* principles is no longer a matter of conformity to objects, either phenomenal or noumenal. Kant himself expresses this in his suggestion, that, instead of assuming as had previously been done, that our cognition must conform to objects, we make the assumption, that objects must conform to our mode of cognition. On the other hand, if the objects of empirical experience are determined only by conformity to the laws of our intelligence, the *a priori* principles of experience become knowledge only by application to those objects. The correspondence between concept and object which thus results is, therefore, a secondary matter, rather the consequence than the ground of the truth of the *a priori* principles. What does at once determine and constitute their truth is precisely the function they perform. Considered apart from this function, indeed, they are not true, for they are not knowledge at all, but mere "cobwebs of the brain," as Kant calls them.

That Kant did not realize the full significance of the changes

he had wrought in the logic of rationalism, or make consistent use of his own new conceptions, we shall attempt to make clear as we proceed. Here we need only call attention to the fact, that he insists upon preserving the traditional rationalistic idea of truth *alongside of* the revolutionary one, though only as a rubric beneath which all is blank—an ideal unattainable by human intelligence. Knowledge of the thing-in-itself, if such knowledge there were, could alone exemplify this truth. Here alone could be found an object absolutely independent of the ideas which refer to it, and to which, as their eternal standard, they must—if they are to be true—submissively conform. And, on the other hand, it is evident, that only in truth of the representative type could the thing-in-itself be revealed to us. For this is an object which lies outside of human experience, and hence can be present to it only by representatives. No such relation as obtains between the phenomenal object and its idea can obtain here. But the impossibility of any representation is equally evident. Any ascertainable resemblance is out of the question. And one cannot postulate an identity of any of the relations between ideas and those which make up the structure of the thing-in-itself; for all the former are limited in their legitimate application to the phenomenal world, while the thing-in-itself *may* be structureless. For the same reason a theory of secondary qualities is ruled out, even the conceptions of unity and multiplicity having no warranted application beyond experience. Thus the thing-in-itself remains unknowable, and the traditional conception of truth is without exemplification.

When we pass on to consider the conception of reality in Kant, we are at first struck by the apparent fact, that the new conception of truth which he has introduced has not had any effect here at all. To be sure, just as he distinguishes between two possible orders of knowledge (one of which we lack), so he distinguishes between two kinds of reality, the reality of the thing-in-itself and that of the phenomenon. The former is the self-

subsistence of an orthodox rationalistic substance, with, to be sure, the important defect, that it is unknowable; and analogy would lead us to expect that the latter would represent the critical standpoint. But such does not at once appear to be the case. The reality of the phenomenon, as Kant treats it, is rather suggestive of empiricism. In his own phrase, it is "that in the phenomenon which corresponds to the sensation." When one speaks of the reality of anything which is not at the moment perceived, that can only mean that it is connected, by means of the analogies of experience, with what is so perceived, so that it coheres with it in a single larger whole. The absent phenomenon thus owes its reality to the present phenomenon—a singular and most instructive parallel to Hume's doctrine of belief.

But when we pause to reflect upon the nature of the coherence with present reality, which gives reality to the absent, we see that here too the critical theory has worked its transformation. This coherence is not a mere association reducible to the contiguity of mutually independent elements. It is the organization of experience under categories. To put the matter differently, the older notion of reality has developed for Kant into two intimately united, but nevertheless formally distinct, factors,—*reality*, in the sense above defined, and *objectivity*. When, therefore, we would rightly estimate the significance of Kant's *realitas phænomenon*, we must recall that only an object can be thus real; and that an object is an object only by reason of its internal (and external) organization. We must, then, even add that it is not simply the absent phenomenon which owes its reality to the work of thought, but the present phenomenon as well, since it is only *as an object* that it could be real. That is to say, apart from the thought-activity, nothing would be present save an utterly meaningless image, to which the attribute of reality would have no application whatsoever.

We have already seen that Kant's critical problem, *How are synthetic judgments a priori possible?* arose through his recognition

of the inadequacy of analytic propositions to provide a basis for science. But it is equally important to recognize that there could have been no such problem, had not Kant accepted the dogmatic doctrine, that analysis must yield final elements. Indeed, the very division of propositions into analytic and synthetic rests on this assumption. For no proposition could be determined as synthetic, unless a complete definition of its terms had exhibited their ultimate disparateness. Moreover, the recognition of the necessity for synthetic connection means that the terms of thought are ultimately simple elements, possessing no inherent relationships. It is only because a synthetic proposition connects *B* to an *A*, which in itself, as *A*, has no relation to *B*, that the connection is conceived to demand an explanation. The validity of synthetic relationship can never be grounded in the nature of the terms themselves.

This, then, is the problem of criticism: How is the validity of these indispensable relationships to be explained? The solution criticism finds in the assumption, that pure thought supplies to experience certain universal modes of relationship, to which every particular experience must be subject, as a condition of its belonging to experience at all. This assumption has its justification in the fact that without it the validity of thought must remain unexplained. It is the only possible means of accounting for the element of necessity in experience, of accounting for the fact that experience is a unity and not a chaos; and hence it must be accepted. What makes the assumption necessary, however, it is important for us to note, is the fact that relations are conceived as external to the terms related. It is only relations between terms already determined as *A*'s and *B*'s, that *a priori* forms of thought are needed, or are *competent*, to explain. If experience does not yield terms given as essentially discrete, the *a priori* forms must remain inoperative. For if the *A*'s and *B*'s are not discrete, then their relationship to each other must constitute in part their determination as *A* and *B*. Consequently, not only is there no need of assuming universal forms of thought to account for their

relationship, but there is no ground for assuming that such universal forms would apply to them at all. Universal forms of thought, as necessary modes of relationship, are altogether incapable of determining the terms which they relate; they are altogether incompetent to determine the content for whose validity they are the necessary ground. Furthermore, even supposing discrete *A*'s and *B*'s to be given, to which *a priori* forms must apply, what ground is there for determining the application of the forms to this particular *A* and *B* rather than to *C* and *D*?

It scarcely needs to be pointed out, that this inability of the critical philosophy to account for the application of the forms to the content of thought is identical with the inability of rationalism to apply universals to particulars. That the emergence of this dualism, implied, as we have tried to show, in the very basis of criticism, is inevitable, appears more plainly upon further consideration. Necessary truth, as conceived by rationalism, was truth which could be deduced from axioms of *a priori* certainty. Any proposition which could not be exhibited as a consequence from *a priori* premises was incapable of attaining rational validity. The result of this procedure of rationalism was, as we have seen, to divide experience squarely in two, leaving on the side of necessity all universal propositions, and on the side of contingency the whole mass of particular propositions. Now criticism, in its contention that necessity springs from the *a priori* forms of thought, attempts to avoid this rationalistic dichotomy, and to institute a new conception of the distinction between necessity and contingency. That is, instead of there being one type of cognition giving rise to truths of reason, and another type giving rise to truths of fact, every possible bit of experience has at once a necessary and a contingent side. However contingent a given proposition, such as *This wax is white*, may seem, it is by the very fact of its belonging to experience, already partly determined by the forms of perception and judgment, and in so far necessary. To be in experience at all is to be subject to the necessary conditions of possible experience.

Now if this new conception of necessity and contingency as aspects of all experience is to be logically followed out, it must be equally true that there can be no merely universal proposition. That is to say, every formally universal proposition must have its aspect or element of contingency. For according to the Kantian logic the necessity or the universality of a proposition lies in the form of connection of subject and predicate. Its terms, which are related by this *a priori* connection, must, then, be given, since they can never be determined by their connections with each other. If it be asserted that other relations than those in which they now stand have determined them, it is still true that any other relation must itself have given terms. Thus every possible universal proposition must have its contingent aspect.

That Kant's own position in the matter is not wholly in accordance with this statement is well known. The formal determination of all possible experience is, indeed, a prominent doctrine of the *Critique*. Not only must every judgment be determined *a priori* as to its form by the categories, but every perception must also be subject to the forms of space and time. Indeed, sensations themselves, in so far as they belong to experience at all, are already determined. To be given, is to be brought under the necessary conditions of experience. The purely contingent, therefore, the 'matter of sensation,' remains an abstraction to the end. It is a limiting conception, a mere instrument of analysis. Matter and form, contingency and necessity, however far we may carry our analysis of thought, present an indissoluble union. This is not Kantian language, but it is unmistakably the doctrine of the *Critique*. Nevertheless, it is not to be denied that Kant draws conclusions which are not in accordance with this doctrine. As we shall try to show, these spring inevitably from the critical failure, or refusal, to admit the complementary thesis, namely, that every universal proposition contains an element of contingency.

If "percepts without concepts are blind," in the Kantian dic-

tum, it is equally true that "concepts without percepts are empty." The conditions of the possibility of experience, except as they receive some particular filling in the actual course of experience, are without significance. Their objective validity depends on their reference to given objects. But while the validity of any universal proposition depends on its reference to contingent fact, the content of the universal proposition, as such, is supposed by Kant to contain no element of contingency. That is to say, while the universal must depend for its validity on particular given experiences, the meaning of the abstract universal as such remains the same no matter what the particular filling may be. But a proposition which remains unchanged in meaning, no matter to what contingent particulars it may have reference, is a necessary truth pure and simple.

It is the purity of the categories of the understanding, that is, their absolute separation from all the particularity of perception, which makes necessary the device of the schematism. Each category has in itself a *certain sort* of meaning, that is, it may be formally defined in purely universal terms; but as thus defined it can never be applied to any objects of experience. It is, however, capable of being given an interpretation in terms of perception; and it is as so interpreted (schematized) that it enters into experience. What connection there is between the formal definition of the category and its schema, is left wholly unexplained. Thus *substance* is defined as "that which may be conceived as subject, without itself being predicate of anything else." As schematized, however, it becomes the permanent in time. Certainly the ground of connection between these two meanings is far to seek. Indeed, as is well known, Kant says of the schematism that it is "an art hidden in the depths of the human soul, the true secrets of which we shall hardly ever be able to guess and reveal."

We have only to state Kant's position clearly, in order to see both its near affinity to, and its divergence from, rationalism. In showing that no particular contingent proposition can be

framed, that is not *in itself* already partly determined *a priori*, Kant has passed beyond rationalism. But his treatment of universals is by no means free from rationalistic assumptions. That is, while he maintains that no universal can have meaning or validity except through reference to contingency, he supposes that there are universal propositions which in their own content contain no contingent element—whose meaning is wholly independent of their application. While such universal propositions are not in themselves knowledge—are, in fact, mere “cobwebs of the brain”—we may use them as premises and deduce consequences from them, which become valid knowledge through their reference to possible experience, or rather to the possibility of experience. Our present concern is, not to refute this position, but to point out its inherent rationalism. For to suppose that universals, which do not in themselves contain their reference to experience, do yet have such reference, is to assume that there are relations wholly external to the terms which they relate. Furthermore, to suppose that essentially meaningless propositions are yet capable of standing in logical relations which possess formal cogency, is to assume that validity of logical relationship is wholly external to the meaning of the terms related. In one sense it is true that Kant transcends this; namely, in his insistence that it is because, and only because, universals do bear a relation to experience that they have significance and validity. Yet in conceiving that this relation is not constitutive of their very universality, he fails to give any logical ground for their reference to experience.

Again, what is the ‘experience’ to which universals must refer to gain validity? To suppose that universals may, in abstraction from their experiential filling, perform logical functions, is to suppose that one may abstract the universal *as such*. But if the universal as such is abstracted, the ‘experience,’ apart from the universal thus abstracted, must be the contingent *as such*. Finally, we wish to call attention to the essential rationalism of the conception of the nature of abstraction, which is implied in this treatment of universals. It is conceived that the process of ab-

straction does not affect the content of what is abstracted. This is, of course, the logical form of the ontological doctrine so familiar to us in rationalism, that the essential nature of a thing is not affected by a change in its relations.

In the foregoing pages, our discussion of criticism has clung very closely to Kant, and has referred in great measure to specifically Kantian doctrines. We intend it, however, to have a larger scope, applying not only to what is peculiarly his, but to the critical philosophy generally. To the reader the objection may seem pertinent, that the development of the critical philosophy by Kant's successors has so transformed the original doctrine, that our arguments, as applied to its later forms, become irrelevant. But if criticism be taken to include all the doctrines of all the thinkers that have drawn their inspiration from the Kantian *Critiques*, one may safely say that no thesis will be found to hold concerning it. Let us, then, define criticism as the theory, that thought has a certain definite form or mode of procedure, which is universally characteristic of it, and, indeed, is essential to its systematic unity; and that the description of this form constitutes, therefore, a body of absolutely necessary truth. That the argument advanced in the foregoing pages with reference to the critical theory as held by Kant applies at the same time to criticism as here defined, will appear evident, we believe, upon consideration.

If thought has a form universally characteristic of it, or in other words, conforms to some universal law or laws of procedure, then the formulation of such law or laws becomes a set of necessary propositions valid for all experience. These necessary propositions, then, must form a body of truth whose relation to other knowledge not thus necessary forms precisely the same problem with which rationalism struggled in vain. Criticism's issue with rationalism and empiricism lies in its conception of universality as the formal aspect of all knowledge. If universality is, indeed, a characteristic of all experience so far as deter-

mined, it ceases to be, by that very fact, the peculiar characteristic of any proposition or set of propositions. If determined at all, knowledge must in so far be universal or necessary, and to belong to experience or to be knowledge means to be determined. In this conclusion, that all knowledge is necessary, the concept of necessity has itself become transformed. It no longer stands for an immediately given, as in rationalistic logic. The necessity of truth does not lie in the isolation of its absolute self-sufficiency, but in its inherent dependence on the entire system of knowledge. Its validity is part and parcel of the validity of all other truth. But as the system is likewise contingent through and through, no validity is more than relative validity. That is to say, no proposition is more than approximately universal. Pure universality is a limit never fully reached. Just as no analysis of experience can, as Kant showed, yield us the final product—bare matter of sensation, pure contingency—so no analysis ever reaches the pure universal.

It has been pointed out by Kant's successors, that the ultimateness of the Kantian distinction between form and content does not hold, and that, furthermore, on Kant's own principles it does not hold. It is, so it is agreed, a doctrine inconsistent with the implied logic of the critical philosophy. Now it is true that the separation of form and content is inconsistent with criticism, so far as criticism conceives necessity as the universal conditionality of thought. But it is the prerequisite assumption of criticism, so far as criticism maintains that any particular law or laws form the indispensable condition of experience. The fundamental ambiguity of criticism lies in its holding at once these two doctrines: first, that knowledge to belong to experience must conform to conditions, or, in other words, that knowledge as such must be conditional and in so far universal; and, secondly, that there are *particular describable* conditions to which all knowledge must conform. If there are any particular conditions necessary to experience, and these are capable of formulation, then that very formulation yields propositions which are merely for-

mal, and which themselves contain no content. If it be argued, that this does not involve the ultimate separation of form and content, since these purely formal propositions are valid only with reference to experience, we may at once reply that to conceive pure forms which apply indifferently to all content, is to conceive their applicability as not dependent on the nature of that content, and hence logically unrelated to any content.

A more important modification of the Kantian position than the one we have just discussed is the elimination of the thing-in-itself, by those successors of Kant regarded as most truly carrying out the critical principles. This doctrine too, it is urged, is inconsistent with the implied logic of the critical philosophy. The concept of an unknowable thing-in-itself, lying beyond the limits of possible experience, is an utterly useless conception, playing no real part in the system. Its only alleged connection with experience lies in the assumption that it is the source of the unformed "matter of sensation." But since no such bare matter is to be discovered in experience, the positing of a source for it becomes simply gratuitous. Indeed, so it is argued, if sensation did yield an utterly unorganized matter, its organization in experience would be entirely impossible. In short, criticism is concerned only with the conditions of possible experience, and what lies beyond experience is altogether outside its scope.

If the argument of the preceding pages has carried any weight to the reader's mind, it must appear evident that Kant's assumption of the thing-in-itself is by no means gratuitous; that, on the contrary, it is a conception of vital importance not only to the Kantian theory, but to the critical philosophy generally. For if it is said that the relations we find in experience, the terms in which we think, are relations essential to the nature of thought, this must mean that these relations constitute the nature of thought as such, and must hold of experience universally. These relations, then, in belonging to the nature of thought as such, are not inherent in, or constitutive of, the elements which they connect. If they were, the claim that they owed

their validity to the nature of thought, would lose all relevancy. Forms of thought, universal relations, must be relations *as such*,—relations indifferent to, and hence external to, the terms which they relate. Being thus external, they must remain inoperative unless there is posited a somewhat for them to connect; and this somewhat, not being constituted by the relations, must be conceived as a bare matter, whose ground can only be sought in a contentless thing-in-itself—or, having no ground, it becomes itself a thing-in-itself.

The question may become clearer upon comparing the critical position with that of rationalism. The demand of rationalism for substance was fundamentally a demand for a reality not constituted by relations. The series of conditions must find a final source in the unconditional, that is, in a categorical proposition. The imperativeness of this demand for a categorical source for conditional propositions arose from the fact that conditional propositions were regarded as wholly conditional. The idea that there could be no final distinction between conditional and existential propositions was wholly foreign to the logic of rationalism. For plainly, if conditional judgments involved in themselves a categorical element, the positing of a distinct, purely categorical proposition would be purposeless.

Now the position which criticism takes is that the series of conditions cannot be traced to a final categorical source, for such source would lie beyond the limits of experience. It therefore assumes that a certain set of conditional propositions must be final for experience. But if criticism indeed recognized that conditional judgments as such contained categorical implications, it would have no ground for assuming the finality of any given set of conditions. The demand for finality would lose all pertinence. What we wish to point out here is that the conception of a set of final conditions, which lies at the very root of criticism, inevitably carries with it the demand for a final given somewhat to which these conditions may be applied. In short, we must conclude that without the conception of a thing-in-itself, the whole critical contention falls to the ground.

There has recently become current a belief, that a very close affinity to the present-day theory of pragmatism is to be found in Kant's regulative ideas of reason. Leaving aside their significance for the moral life (which we shall discuss later, and which is irrelevant to our immediate purpose), their significance for theoretical reason depends solely on their function. They are never realized in any experience; that is to say, no analysis of a given experience can reveal them as verified in it. Yet they are essential to thought; for it is through their use that given experiences become organized into the larger unity of experience as a whole. Their kinship with pragmatism thus appears upon their face. Kant seems to say of them what the pragmatist would say of all conceptions—that while they are never completely satisfied by any application of them, yet they serve to bring unity to our thought, and in this service, if in no other, find their sanction.

Striking as this similarity to pragmatism appears to be, a closer examination of the Kantian doctrine will show, we believe, that these regulative principles are neither more nor less closely related to pragmatism than are the constitutive principles. In the first place, while they are instrumental in the sense that their significance depends wholly on their usefulness, they are *indispensable* instruments for the organization of thought. Consequently they are not, like the principles of pragmatism, subject to correction. They bear none of the ear-marks of evolution. They are constructions of reason itself, created once for all by reason for its own ends, without reference to the experience to which they must be applied, and thus serve but to emphasize the dualism between reason and the existent. True, they are to be assumed as mere *as if's*; but their 'as if' is not the 'as if' of an instrumental logic, for they are not *provisional*. They are never to be replaced by more workable conceptions. In short they bear the unmistakable stamp of dogmatic absolutism. In the second place, Kant says of them that their function is merely to arrange the results of experience, without at all affecting the

content of what is thus arranged. They organize the product of the understanding, just as the categories organize the product of sense-perception. That is, they are pure form separated from all content, relations absolutely external to what they relate.

In the beginning of our discussion of the critical philosophy, we found that the application of *a priori* forms of thought to content is impossible of explanation. Since the *a priori* form is a relationship which does not determine in any degree the terms to be related, there is no rational ground for its application to these terms, and the use of the forms becomes wholly arbitrary. From this it follows that if the ideas of reason are not constitutive of experience they cease to be even regulative.

The inherent rationalism of the ideas of reason comes out most plainly in Kant's conception of *symbolic anthropomorphism*. The objects to which these ideas refer, viz., a supreme being, an intelligible world, and an immaterial being, are objects which can never be realized in any experience. Reason is utterly incapable of knowing them. They must remain mere illusions. Yet even as illusions reason is forced to assume them in order to bring unity within experience. The reconciliation of the demand which reason feels for going beyond experience, with its inability to do so, is found by Kant to lie in the limitation of our judgment concerning these noumenal objects strictly to the relation which they bear to the world as we know it, without ascribing to them the possession of any qualities in themselves. Thus we may, and even must, regard the organic world *as if* the work of a supreme will and understanding; but in so judging the world we do not in the least assert anything concerning the nature of the supreme being. Knowledge of the relation of God to the world constitutes in no degree a knowledge of God. As Kant himself expresses it, we have in the comparison of God's relation to the world to an artisan's relation to his production, an example, not of an imperfect similarity between terms, but of a perfect similarity of relationship between terms which in themselves are utterly disparate.¹ Surely this is outdoing rationalism itself.

But we cannot discuss Kant's regulative principles without reference to their function in the moral life. Indeed, it is in the fact of their common functioning in the world of conduct and in the world of thought that the contemporary pragmatist is wont to feel his closest kinship with criticism. In the realm of speculative reason, the ideas of God, the world, and the soul remain mere empty conceptions. Their objects lie beyond the reach of thought. Their only sanction lies in the constant impulse of thought to go beyond its boundaries. If this were all that could be said on their behalf, the position of the regulative ideas would be precarious indeed. But to consider only their function in theoretical knowledge is to leave out of account the most important part which they play in the life of man. For if theoretically they have no validity, practically they are necessary. Although their objects must remain altogether unknowable by speculative thought, in the moral life is found indubitable assurance of their reality. They are the postulates of practical reason, the necessary conditions for the possibility of moral conduct. Now this conception of the ideas of reason, as obtaining their ultimate sanction in the sphere of conduct, would seem to accord to practical reason a certain supremacy over speculative thought. It is in the practical life that the final solution is found of problems which prove insoluble for thought. In so far as this is true, the Kantian conception of regulative ideas doubtless does exhibit a leaning toward such a voluntarism as is often associated with pragmatism. Furthermore a certain similarity to the pragmatist theory is to be found in the very fact that the regulative principles serve to unite conduct with speculative thought. But here again we find that the resemblance to pragmatism is far less than appears at first sight, and that the half-acceptance of an instrumentalist position serves to emphasize the critical adherence to dogmatic absolutism.

In the first place, let us note that the validity which the moral consciousness furnishes to the ideas of reason does not in the least affect their function for thought; they are valid for practical

reason only. The world of moral conduct as such is a world utterly beyond the scope of thought. The very fact that the connection of theoretical and practical reason is found to lie in such transcendent ideas as God, the world, and the soul, is a denial of that intimate relationship of conceptual thought to conduct, upon which pragmatism so earnestly insists.

In the second place, we cannot refrain from pointing out the absolutism involved in Kant's conception of the regulative ideas as postulates of practical reason. It is true that their validity lies in the service that they perform; but it is an *indispensable* service. The validity of these concepts within the sphere of practical reason is absolute. Morality is not a developing function, the nature of which becomes modified with the modification of other activities. The whole Kantian conception of it is thoroughly rationalistic. The morality of any act is determined by the nature of the act as such, and remains unaffected by the relation which that act may have to other acts. The place of the act in the phenomenal series of conditions is utterly irrelevant to its moral value. Furthermore, its moral value remains wholly unaffected, whether such an act has ever taken place or ever will take place. In other words, moral values are absolutely independent of content on the one hand and of existence on the other.

CHAPTER II

ABSOLUTE IDEALISM

The chief enemy of dogmatism during the last hundred years has been the Hegelian philosophy. This has been the great liberator of human thought—if only, as many believe, to plunge it into a new slavery deeper than the old.

To deal in summary fashion with absolute idealism is not a task to be lightly undertaken. It has been as prolific in sects as if it were a religion—perhaps because for many it has been a religion—and the sects are as radically opposed to each other as to any adversary from without. We have, indeed, always the writings of the master himself to refer to; and in comparison with these no other productions of the school are of first-class importance. But here one must strain to comprehend a mind both subtle and profound, expressing itself in a technical language of unparalleled obscurity. The danger is that one may find as many conflicting doctrines in the master as the sectarians have divided amongst themselves; or, even more, that in spite of the lessening of a century of controversy we may be sectarians ourselves. Fortunately, however, the matters with which we have here to deal are of a very elementary character, so that it may not be impossible to interpret them in a form which will be fairly adequate and generally acceptable.

In the present chapter, we propose to discuss, first, the opposition of Hegelianism to the dogmatic logic; and, secondly, the extent to which the presuppositions of the latter may still be retained by the former, and the difficulties and uncertainties to which they may continue to give rise.

Just a word may be premised as to the attitude of absolute idealism toward empiricism. (Observe that we speak of empiricism as a philosophy, not of empirical science.) It is one of

almost entire misappreciation. This is the great defect of Hegel's own intellectual equipment, and it has very generally characterized his followers. It is true that to Hegel we owe some very incisive criticisms of the empiricist procedure; but we also owe to him a burdensome inheritance of misconception and prejudice. Of the very meaning of psychological analysis, as the English school had developed it, he had but a hazy impression. The analysis of ideas appeared to him to be nothing more or less than an enumeration of the attributes and properties of things. Least of all did he suspect the damaging inroads which the empiricist could make upon his own position. Hegel accepted without reserve the rationalistic distinction between the generalized image and the conception, and he was inclined to set down those who denied the separate existence of the latter, as no philosophers. It is true that the evolution-idea gave him a new mode of formulating the relation between image and conception. The latter is an outgrowth of the former, a higher stage of its development. But of this essentially psychological relation only a 'logical' account is given: all the stages of mental development exhibit the same *content* under more or less adequate *forms*. The intense contempt which Hegel everywhere exhibits for psychological considerations throws a curious side-light upon his own limitations.

But Hegel not only misunderstands empiricist doctrine. He is thoroughly out of sympathy with the empiricist temper. Its modesty is a perpetual affront to him. His own ideal of science is one in which facts are ultimately useful only for the illustration of principles; and a curiosity which is confined to the limits of experience, which proposes to itself nothing beyond the description and generalization of facts, appears to him to be far beneath the full dignity of man. That a philosopher should pride himself upon his self-imposed reserve, is as far from his conception of propriety, as that he should be proud of his ignorance.

In Hegel's opinion, the history of empiricism marks a distinct divergence from the forward development of philosophy—in-avoidable, as such divergences ever are, and in a manner justified

by the fatal narrowness and abstractness of rationalism, but a divergence none the less. It is philosophy passed out of itself into its other; or, as it is somewhere expressed, it is a kind of philosophy in the same sense in which darkness is a kind of light. In a word, Hegel's opposition to empiricism is as strong as his own principles permitted him to assume toward any philosophy whatsoever. This, we repeat, appears to us to be his most serious limitation; and it may be added, that in Great Britain, where the Hegelian philosophy is now most strongly established, this original limitation has only become more prominent by reason of the long and bitter warfare with the empirical philosophy, whose reign its invasion disturbed.

The cleft between absolute idealism and the old logic is most strikingly displayed in the theory of relations. While for the dogmatists these had been invariably external to the essence of the terms related, for absolute idealism the essences of things are wholly constituted by their relations. It may be of assistance to us in our endeavor to appreciate the absolutist position, if we retrace, in a general and schematic way, the thought-transition by which this revolutionary change was effected.

The long continued controversy over the heliocentric hypothesis was sufficient to familiarize even the popular mind with the idea, that *rest* and *motion*—at least in the ordinary application of the terms—do not appertain to things as they are in themselves, but only to things in definite relation to other things. Whether there must be assumed an absolute standard underlying these relativities, remained a question for the learned; and both sides were taken by eminent authorities. From the end of the seventeenth century, however, the relativistic position was, though widely questioned, a commonplace of scientific theory.

Intimately associated with the foregoing and, no less attractive to the speculative mind, was the theory of the relativity of *spatial magnitude*. This, too, met with scepticism, but the common intelligence had long embraced it as self-evident. The celebrated

exposition of the theory by Laplace simply confirmed its hold. Closely bound up, again, with spatial relativity is the relativity of *temporal position* and *magnitude*; for time is habitually treated by the scientist as a sort of one-dimensional space. When this also has been embraced, there remains no convincing reason for questioning the similar nature of the mechanical concepts of *mass* and *force*. The general doctrine, then, of the relativity of all the primary qualities of matter becomes so far from paradoxical,¹ that it is apt to meet with unquestioning acceptance.

But the primary qualities of matter are precisely those upon which rationalism had fixed as constituting its essence. The relativity of the secondary qualities had been recognized by Descartes, and it was for this reason that he branded them as mere appearance. Precisely the same conclusion was therefore natural in the case of the primary qualities. Leibniz actually reached this conclusion with respect to extension; and only the then chaotic state of elementary mechanics permitted him to avoid equally condemning motion and energy. When therefore, the mechanical theory of the eighteenth century had assumed its classical form, the time was ripe for the announcement of the thesis, that all the knowable qualities of material things are determined by their relations to other things, and hence are merely phenomenal.

This conclusion was facilitated by another consideration, which, however, for the rationalists was not clearly distinct from the foregoing. The observable qualities of things are not only relative in the sense of owing their meaning to their implied reference to the qualities of other things. They are also (with the exception of mass¹) relative in the sense that they change in

¹We are not surprised to find a disposition to identify the concept of mass with that of matter itself. Size and shape, density and velocity are then recognized as accidents: but the material body not only has mass, but *is* the mass. Otherwise put, mass shows an evident tendency to replace extension as the essence of matter. But aside from the fact that its 'mathematical' relativity is a fatal obstacle to a strictly rationalistic interpretation, there is a further difficulty yet to be mentioned. It is readily perceived that the concept of mass has meaning for us only in connection with those of duration, extension, and force. *Mass* may, indeed,

accordance with change in their relations. That is to say, the relativity is not simply *mathematical*, but also *dynamical*. Furthermore, in the dynamical as well as in the mathematical sense of the term, the relativity is not to a few things, or even to things in general, but to the universe as a system of interrelated things. This is the principle of universal reciprocal determination, for which Newton gave a solid basis by his discovery of the law of gravitation, and which Leibniz proclaimed, while he yet denied it, in his theory of the preëstablished harmony.

If then the distinction between the essential and the relative was anywhere to be made out, it would have to be in the case of thinking substances, or souls. But, in the first place, where a distinct class of such substances was recognized, they had always been treated after the analogy of material substances. This was, of course, unavoidably true, where the characteristics of the soul-substance were simply the negatives of those of all (or some) material things: *simple, incorruptible, immortal*, etc. But it was also true of its own peculiar attribute of *thinking*, which was always thought of in express opposition to the material attribute of *extension*. A changed interpretation of the latter was therefore bound in some measure to affect the former. In the second place, a line of argument precisely similar to that which had transformed the material attributes into relations was readily applicable to the qualities and functions of the soul. Whether the essence of the soul was (with Descartes) to think, or (with Leibniz) the energy by which its ideas, conscious or unconscious, are determined, it was necessary that this essence be inseparable from the soul-substance, and, independently of everything else, equally characterize it at all times. But so far as unprejudiced observation could show, the soul's faculty of thought or ideation is quite as relative to circumstances as the color or density of matter. To

be said to be a name for the fact, that a given force, acting upon different bodies, produces in a given time accelerations that vary only from body to body. Now since a force acting upon one body is always a strain between two, it is obvious that mass does not belong to any particular body apart from its dynamic relations to other bodies.

all appearances, it is dependent not only upon the stimuli and distractions of the outer world, but upon the condition of the nervous mechanism. In the third place, the concept of soul-substance had itself, with Kant, fallen under suspicion. That of material substance had at least found a new excuse for being in the doctrine of the conservation of mass. But among the observable qualities or contents of the soul there is no such constant factor—nothing beyond the empty abstraction by which its manifold ideas are subsumed under the identity of one consciousness.

The reader will surely understand that the above is not to be taken as a presentation of the very arguments by which Hegel was led to the doctrine of the essentiality of relations. What we have wished to show is that—apart from the peculiar forms of the critical philosophy—the doctrine which reduced the essential attributes of eternal substances to the mutual determinations of phenomena was a characteristic manifestation of the spirit of the age. We have already described Kant's attitude upon the matter—how, clinging to the old logic, while he ushers in the new, he still conceives of a self-subsistent substance lying behind the phenomenal substance, though there remains no determination with which he can identify it. In Hegel's system, that dualism has been left behind. It is now recognized, that in the concept of reciprocity rationalism has found its refutation. That the thing-in-itself is unknowable has become a truism, for there is nothing in it to know. The real thing is wholly determined in all its qualities by its relations to other things. More truly than Leibniz had conceived, every reality is a mirror of the universe—not by reason of a preëstablished harmony, the work of a transcendent creator, but simply because that is what its existence *means*. Essence and accident, the inner and the outer have coalesced. The actual is no longer to be sought for beside or behind the phenomenon. If the distinction between them is not to be abandoned, it must be radically transformed.

Before taking up the new doctrine of the actual (which takes the place of the rationalistic doctrine of substance), it will be convenient for us to examine some of the more immediate consequences of the essentiality of relations.

In the first place, the representative theory of knowledge has lost its excuse for being. The Kantian compromise, which had preserved the old ideal only to show it to be impossible of fulfillment, is already only of historical significance. With the independent essence has vanished the independent standard of truth. The task of reason is not simply to construct a thought-copy of a reality which exists prior to all thought. On the contrary, there is no aspect of reality which is not wholly dependent upon at least the possibility of its being known. The new conception of truth, which Kant had introduced as an imperfect substitute for the ideal, and as having relevancy only within a restricted sphere of thought—the conception of truth as service in the organization of experience—has occupied the whole thought-universe. While the relation of correspondence between idea and object is not denied, it is not regarded as an ultimate and inexplicable datum.

From one point of view the critical doctrine is thus carried to its extreme. But from another it has lost much of its apparent radicalism. To make use of Kant's famous figure,—both the popular prejudice, that the sun revolves about the earth, and the enlightened doctrine, that the earth revolves about the sun, have given way to the theory, that both alike revolve about their common center of gravity. It is the sober conception of a system that has triumphed. The startling thesis of the critical philosophy, that the constitutive relations of things do not belong to the things themselves, but are supplied by the subject, has given way to the synthetic view, that these relations are at once subjective and objective—that, belonging to the organization of experience, they appertain to both subject and object indissolubly.

In the second place, the intuition of reason has become un-

necessary—or, to speak more guardedly, an important ground for its necessity has been removed. For the function of the intuition is precisely to bridge that gap between idea and reality which now no longer exists. Upon this point we need not dwell, for the connection between intuitionism and the representative theory of knowledge has been treated at length in an earlier chapter. Here we would merely add that even if, upon other grounds, the intuition should appear to be indispensable as the foundation of science, it is now inadequate. For the intuition owes its self-evidence to the clearness and distinctness of its contents altogether independently of anything else. But if the essentiality of relations is to be regarded as established, there can be no such independent truth.

Let us turn now to more positive considerations.

According to absolute idealism, the actual is the system of phenomena. Like the substance of the rationalists, it is a self-subsistent unity; for there is nothing outside of it to which it can refer or upon which it can depend. Its existence and its meaning are alike contained within itself. For any particular phenomenon, a ground, or cause, may properly be sought; and as this is found in another phenomenon, the inquiry may be repeated without limit. But for the complete system it is ridiculous to seek a ground or a cause. It stands, to be sure, in relation to its phenomenal elements, and may be thought of as dependent upon each of them; but in depending upon them it is simply depending upon itself.

This may be otherwise expressed by saying that for Hegel the actual is a *concrete universal*, as distinguished from the abstract universals from which rationalists had sought to deduce all things. An illustration of his theory is to be found in any natural or social organism. If one inquires, for example, the meaning of 'American citizen,' an answer in the spirit of the rationalists would consist in a definition embracing all the points of likeness in which all American citizens agree; while an answer in Hegel's spirit would comprise an account of the national life, in which

various classes of citizens—rich and poor, educated and illiterate, men of various parties and sympathies—play distinctive parts. That is to say, in his view the differences between American citizens are quite as essential to an understanding of the conception as are their likenesses. To know the American citizen is to know the United States of America. Even so, to express the meaning of 'tissues of the human body' no mere definition will suffice, but only an account of the various tissues in their complex interrelations. A further point of great importance must be noted. If we consider a series of abstract universals, related as species and genera of increasing extent, the thought-content steadily diminishes; whereas in the case of concrete universals the wider the extent the richer the content. So that the limit of explanation is not to be found in a set of simple ideas, or *summa genera*, of maximum extent and minimum content, but is a *summum genus* which contains, as well as subsumes, all its species, and whose meaning exhausts all possible meaning.¹

It is true that, upon reflection, the organism shows itself to be, after all, an imperfect illustration of actuality. The meaning of its component elements is not sufficiently shown by their mutual relations alone. There is an environment also to be considered, and upon this environment every part of the organism stands in absolute dependence. Strictly speaking, there can be but a single actuality.

But that the analogy may lead us as far as possible, it must not be supposed that in his conception of the organism Hegel confines his view to a single stage in its life-history.² As far as the reciprocal dependence extends, so far the concept of the organism extends. The true organism embraces the entire de-

¹A resemblance to mysticism lies upon the surface, but its importance is easily exaggerated.

²As will be seen in the sequel, however, the maturity of an organism is not to be regarded as simply one stage among others in its development. It is that in which the whole development is contained—its end, and at the same time, its principle. And the eternity of the actual, of which we immediately speak, does not mean simply the inclusion of temporal change. It means the *incorporation* (*Aufhebung*) of all stages of the universal evolution in its consummation—God.

velopment. This is (in part at least) the significance of the dictum of absolute idealism, that the actual changes and is yet eternal. The infinite organism embraces the whole past and future—it is a *universal evolution*. It is eternal, not as if change were illusory, but because all change is comprehended within it.

In the philosophy of Hegel a new scientific influence has become dominant—that of the history of civilization. This influence, which prior to the middle of the eighteenth century is to be discerned only by careful scrutiny, has by the beginning of the nineteenth relegated to a secondary place the methods and principles of mathematics. In this, as in so many respects, the philosophy of Kant is a turning-point. It is there that one finds the supreme effort of rationalism to interpret the phenomena of human progress in terms derived from the study of mechanics—to make a morality that simulates the uniformity of natural law square with a humanity that has passed up from savagery to civilization and is still climbing. In absolute idealism, the interpretation of progress operates by means of categories to which it has itself given rise, and by which, in turn, even the theories of quantity and number are dominated. In other words, absolute idealism is a philosophy of evolution—the philosophy of evolution *par excellence*, its advocates would say.

The significance of the revolution thus accomplished it is difficult to overestimate. It is not simply a shifting of interest from one science to another. It marks the emergence of a higher ideal of human wisdom. The oldest division of the accumulated learning of man, the division upon which all further specialization has rested, is that between history and philosophy; and this division has persisted, without any effectual attempt to overcome it—unless the work of Aristotle be an exception—down almost to our own day. It is the cleft between the individual and the universal, between the curiosity that would fain know the fortunes of men and things in all the fulness of their concrete particularity, and the curiosity which is not to be satisfied by mere

stories, but only by explanations upon general principles. The division is, no doubt, a preëminently useful one—as its long persistence would suffice to prove—and Heraclitus, who was, so far as we know, the first to perceive it, was not without warrant in supposing that this discovery had made him the wisest of men. We may well say that self-conscious philosophy begins with the insight, that “wisdom is apart from the knowledge of many things”—that “it is to know the thought by which all things through all are guided.” But, however advantageous such a division may be, it inevitably gives rise to limitations, which sooner or later become serious; and a synthesis which successfully overcomes these limitations means not simply the origin of a new department of science or history, but a reformation of both science and history, by which few departments of either can fail to be profoundly affected. This is the great accomplishment of the century from Turgot to Darwin—the synthesis of history and science in the conception of evolution. A score of such new births as geology and philology, economic history and the history of philosophy itself are not wholly surprising under the circumstances.

It is, then, as a representative of this movement that Hegel claims our attention, and this in spite of the fact that his work precedes that of Darwin by half a century. His acquaintance with the facts upon which a general theory of evolution might be founded was almost entirely limited to social phenomena. The development of the individual organism had been so imperfectly studied, that a grave dispute still waged between the advocates of preformationism and those who saw in the process a true epigenesis, a gradual change from the simple to the complex. The evolution of organic species was generally set down as a discredited hypothesis. But for the understanding of social progress Hegel had behind him the work of Turgot and Condorcet, of Lessing, Herder, and Kant. The broad facts to be explained were already familiar, though only the beginnings of a dynamic theory had yet been made.

The feature of social evolution which stood out to Hegel's view was the manner in which the older and simpler forms of organization persist as essential elements in the higher forms. The family in civil society, the folk-song in the symphony, the fear of God in the Christian religion—these may serve as examples of the type of phenomenon which he found of the utmost significance. Perhaps for us the best illustration of this significance is to be found in a parallel observation of biologists,—the persistence of the protozoic type in the structure of the reproductive and somatic cells of the highest animals. It is with a species of awe that one learns, for example, that the cells of the human body are still living substantially the marine life of their remotest ancestors. The sense of physical solidarity, the realization of the fact that evolution means the persistence of the old in the very substance of the new, is tremendous. It was this, we repeat, that Hegel observed in human society,—the preservation of primitive man in the structure of modern civilization. He gave the process the name of *Aufhebung*, a term for which a proper etymological equivalent in our language has been sought in vain, but which may be well enough rendered by *incorporation*. Two aspects of the process were pointed out by him; first, the loss of independent self-subsistence by the lower form; and, second, its persistence as a mere element, but an essential element, in the structure of the higher form.

But Hegel had not only observed this process. He had his theory as to the manner in which it is accomplished. If we examine carefully—he would say—any of the lower forms which have been mentioned, we perceive that it contains within itself the sources of its own inevitable dissolution; it involves its own contradiction. Thus in the family parents and children are held together by the dependence of the latter upon the former; but through parental care the children are brought to a maturity in which that dependence no longer exists, and the family falls apart into a number of individuals having separate and distinct interests. If even between these individuals a natural affection

continues to exist, the renewed course of family life itself, with the consequent numerical increase of the group, must bring about in time the practical dissolution of that tie. Thus a competitive system is originated, which is the complete antithesis of all that the family is and represents. But unrestrained competition has in it, in precisely similar fashion, the seeds of its own undoing. That competition may be effectual, the possession of goods must be assured; and such an assurance can only be given by a new family unity—not the primitive family based upon human instinct, to be sure, but the self-conscious family which we call the state. The state, then, is the outcome of a two-fold process of self-negation. The family has given rise to its opposite, and this opposite has in turn given rise to its opposite; which, however, is not now the primitive form from which the development set out, but a higher unity in which both of the earlier stages are contained as essential elements. To be sure, neither the family nor the competitive order is quite what it was before the origin of civil society. But that is simply to say that each has lost the appearance of self-subsistent completeness which it formerly possessed. It has become a civil institution, *aufgehoben*, incorporated, in the larger life of the state. The complex process thus exemplified is called *dialectic*.

In the dialectical movement there is one feature to which especial attention must be called. This is the fact, that it is the very nature of the lower forms to develop in the manner described. The development is not something which *occurs* to them by reason of accidental surrounding conditions. It is implicitly contained in them; and as it proceeds it exhibits what their real nature was better than they did themselves. It alone reveals their *truth*, as distinguished from what they seemed to be. In a different sense, the whole development is contained in the higher form which is its outcome. Indeed, when it is reflected that the development is not a mere temporal succession of events, but a logical sequence of essentially interrelated factors, it may be said that the higher form *is* the development; for in it the same opposition and synthesis are evermore preserved.

It was in the domain of philosophical thought, that Hegel found the richest exemplification of his theory. The creation of a philosophy was, in his view, as impossible as the creation of a political constitution—and this for reasons which have already been set forth. The advancement of knowledge could not consist in the mere addition of new to old. For—by reason of the essentiality of relations—the mastery of concepts, the insight into things, is inevitably interpenetrating. A complete knowledge of any object, a complete comprehension of any concept, would amount to omniscience—no possible addition would remain. What happens, therefore, is that our abstract and palpably inadequate notions of things gradually gain in concreteness. The old truth becomes the new, when hitherto unperceived conditions and limitations of its applicability are revealed. It must then be regarded as refuted, so far as its former pretensions to absolute universality are concerned; but this refutation means that it has found its due place in a larger scheme of truth.

It is this conception which enabled Hegel to organize a new department of human knowledge—one which Bacon two hundred years before had described as wanting, but the lack of which had not yet been supplied—the history of philosophy. We have already remarked that to the thinkers of the dogmatic period the striking feature in the succession of world-theories is the inconsistency of each one with every other. It is a lamentable series of failures, to which the ultimate touch of pathos is given by the curious vanity with which each man hopes to finally triumph where all his predecessors have met defeat. Hegel sees matters in a different light. To him the refutation of a system means simply that the peculiar limitations of its principles are perceived, and that they are accordingly included in and subordinated to principles that are at once more comprehensive and more concrete. The catalogue of the philosophers and schools of the past is in truth the index of an inspiring record of progress; and the relation of the latest thinker to those who have preceded him should be one of gratitude and reverence. While he may

be vain enough to hope that by bringing together the results of their labors he may produce a system that shall surpass them all, he ought not to be unwilling to reflect that his own best thoughts will be reduced to a place of subordination in the grander system of the future.

Needless to say, the process is here, as elsewhere, dialectical. Indeed, it is from this field that the concept of dialectic is obviously derived. No philosophy is refuted until it refutes itself; and its self-refutation means that it passes over into its negative. Thus it is the palpable failure of rationalism to explain the individuality of things upon universal grounds, that makes empiricism inevitable. But the negative is equally insecure; as the failure of empiricism to frame an adequate account of the universal aspects of things illustrates. Hence the second negative arises, which is the synthesis of the two opposites. Philosophy returns to the universal as its principle; but this is not now the empty universal of rationalism, but the generic type which contains the grounds of its own differentiation. Absolute idealism is thus the *truth* of both rationalism and empiricism, their logical outcome which first makes clear what each really contained. And as it maintains both within itself as essential factors of its own higher complexity, the dialectic by which it has arisen still continues evermore within it—it *is* that dialectic.

What is thus true of philosophical systems is equally true of those fundamental concepts in terms of which the interpretation of the universe is carried on; for the history of philosophy is essentially conditioned by the development of these concepts. Philosophy comes into existence with the explicit emergence of pure thought, in the Eleatic school; and it is naturally then in the poorest of its categories, that is to say, at the lowest of its possible stages: mere *being*. The great advance made by Heraclitus (whom Hegel apparently supposes to be later than Parmenides) is due to the fact, that he has made out the dialectical unity of *being* and its negation, in the relatively complex category of *becoming*. Here also the lower forms continue as permanent

elements of the higher; and here also the higher form *is* nothing more than their reconciliation. Each of the two elements suffers a certain modification; but that again means only that it has lost its original deceptive appearance of isolated self-sufficiency. The higher category shows better than the lower what the lower really was. It is its 'truth,' that is to say, its logical outcome.

Hegel repeatedly remarks upon the altered conception of *immediacy* which this evolutionary doctrine brings to the fore. The dialectic sets out from an immediate in the rationalistic sense—an absolutely simple and unrelated thought, which for that very reason is empty of all content and cannot even be distinguished from its own negative. Hegel is insistent upon the point, that no such thought can be more than this. But every new synthesis is immediate in a different sense. It is self-mediated. For though the preceding evolution is necessary in order to produce it, that evolution is *itself*.

The same is true of the logical dialectic taken in its entirety. Every category is the whole development up to itself. And the supreme category is nothing more or less than the complete dialectic.

For this reason the mere temporal development of the categories, as the history of philosophy records it, is, after all, a matter of secondary concern. The really significant thing is the dialectic as it exists in the higher category. For though the historical process, in so far as it occurs at all, occurs in precisely the one possible manner, nevertheless it is constantly obscured and interrupted. Historical change is not always progress. Moreover the very temporal sequence of the stages gives them an appearance of mutual externality, which is the reverse of truth. Not that the historical course of events is without its suggestiveness. But it is logical insight—the perception of the eternal synthesis of opposites—that alone can be receptive to the suggestions of history. Thus, in principle, logic, the science of the eternal dialectic, is the presupposition of the intelligent study of the historical dialectic. It belongs, indeed, to the historian of

philosophy—as Hegel is reported to have said¹—to show in detail “how far the gradual evolution of his theme coincides with, or swerves from, the dialectical unfolding of the pure logical idea.”

There is another general feature of Hegel’s logic, which we must not neglect to emphasize. In his view, it is the lower category itself, which, by reason of its own inherent character, develops into the higher. No outside influence plays any part in the process. It is not necessary for us to think *about being*, to compare it or contrast it with any other category, or even to use it in any concrete connection, in order to produce the dialectic. All that is mere “external reflection.” Above all, no induction is necessary. It is not as if the category were an hypothesis accepted provisionally and gradually corrected as its application to new instances requires. On the contrary, it is accepted without reservation—it fills the mind’s whole horizon—and then, without extraneous interference of any sort, it corrects itself. It is only necessary that *being be thought*—that is to say, that the thought named ‘being’ continue—and it transforms itself into *naught* and into *becoming*. The dialectic is an expression of the thought’s own essential spontaneity.

It will be readily seen from the above, how vital to Hegel’s system the assumption of pure thought as a particular species of conscious activity is. He is unable to speak without contempt of those who pretend to philosophize and yet deny the existence of such thought. The denial is to him a mere confession that the one who makes it is so far undeveloped as to be incapable of the study of logic, and so of any philosophical speculation worthy of the name. Not that this is his only answer. In his *Phenomenology of Spirit* he attempts to show that pure thought (as well as concrete thought, of which later) is a necessary development from the very lowest sensuous consciousness. From this position he does not swerve, and his whole system of philosophy is conditioned by it.

¹ In an editorial addition to *Encyclopedia, Logic*, § 86; Wallace tr.

The purity of thought does not, of course, mean that it stands in no organic connection with the lower forms of consciousness. It has grown out of them. Experience—the data of mere perception and the quasi-universals formed by induction—is and remains its points of departure. Cut off from this origin, it would be a dead formalism. Its purity, then, means its negativity—in the sense which we have previously described. Having emerged from experience, the explicit fact about it is that it is *not* experience. It is not, like experience, subject to correction by yet unknown exceptions; for its truth is dependent upon nothing outside of itself. That is to say, it has no object with which it must square—or, if you please, its only object is itself—and its development consists solely in its better and better squaring with itself. Thus it exhibits an absolute universality and necessity, such as experience indefinitely strives towards, while ever remaining at an infinite distance from it.

Pure thought also differs from experience in its transcendence of the individual limitations of the thinker. Each man's experience is more or less peculiar to himself; and inductive science can only approximately cast out the errors thus arising. But pure thought is not one man's thought to the exclusion of others'. How could it be, seeing that it has no object beyond itself? The varying experiences of different men have a meeting-point in the common object to which they refer. But pure thought is its own object; so that the universality which it possesses means that, while it emerges from the individual experiences of men, it is unitary. Not that it is a bare identity either (as if one man's thought were *ipso facto* another's) or an abstract universality (as if one man's thought were simply like another's). It is a concrete universal, of which their several thoughts are partial, though essential, aspects. The logic has an existence and character of its own, independent of the circumstance that you may resolve to study it; though, again, it is only in the conscious life of you and of other men that it has any existence. (So the state lives before the citizen is born; but there can be no state

without citizens. So, too, God himself exists only as he is self-conscious in man.) When you think *measure*, or *cause*, or *end*, it is not you, as you, that think it. The logic is not a development within your particular self, or even an inheritance passed on from man to man and increased by successive exertions. "For these thousands of years the same Architect has directed the work; and that Architect is the one living Mind, whose thinking nature it is to bring to self-consciousness what it is, and, with its being [*i. e.*, its present stage of development] set as an object before it, to be at the same time raised above it, and so to reach a higher state of its own being."¹

Now *in relation to experience pure thought is altogether* a priori—as its character of universality and necessity sufficiently indicates. It needs no experiential evidence to support it; and all experience must conform to it. But the relation of pure thought to concrete thought—which is very different from mere experience—is not thereby stated. For concrete thought is the result of a further development. As a matter of human history this development consists in an appropriation of the most general results of the empirical sciences, and the casting of them into a form in which they possess the self-sufficient necessity of pure thought itself—that is to say, we repeat, an absolute independence of mere fact or of any inductive evidence. For this achievement the inductive sciences themselves were, to be sure, a necessary precondition; but that does not compromise the certainty of the result.² The logic, too, is a precondition—but only as a lower stage of a development comes before a higher; which, let it be remembered, means that the logic first shows what it truly is, when it is viewed as an element in concrete thought. Seen, then, in its truth, the advance is a typical dialectic, due, as always, to the fact that the given stage contains more implicitly than it

¹Encycl., § 13, Wallace's translation, slightly altered.

²The relation here is like that of the experiment to the rationalistic deduction. By reason of the finitude of human powers the experiment is necessary in order to point the way. But experimental evidence forms no part of the structure of the science

exhibits explicitly. So conceived, it shows two stages, the philosophy of nature and the philosophy of spirit. These two stages, with the logic, are a reflective recapitulation of the dialectic of actuality itself. For nature is nothing else than the negation of thought—thought objectified, 'petrified' (in Schelling's phrase), representing in an external way the same dialectic which the logic sets forth. The many permanent natural forms are arrested developments corresponding to the various stages of the evolution of the pure 'idea.' (This is why, for example, the categories of the old rationalism were fairly competent in the realm of mere mechanics, but failed altogether when applied to the explanation of the simplest organism.) Spirit is the return of nature to thought again in man: first as a thinking subject; then in the thought-suffused institutions of human society; and finally in the forms, at once subjective and objective, of art, religion, and philosophy. Philosophy, as the outcome of the entire threefold dialectic, is the supremely actual. In other words, God is in very truth the spirit of philosophy.

Upon its face, absolute idealism is the reverse of rationalism. Its procedure, instead of being a descent from first [pre]mises which are severally clear and distinct and absolutely true, and impart their truth to all that follows from them, is an ascent from thoughts which, as they stand, are unclear and inadequate; and its fundamental principle is its goal. It would be difficult to imagine an opposition more extreme. Accordingly, the popular usage which has grouped absolute idealism with philosophies of the Cartesian type under the one name of rationalism may well seem inexcusable. It is our conviction, nevertheless, that in various important respects the popular classification is amply justified; and that the absolute idealist, despite his courageous struggle for spiritual liberty, has not succeeded in getting himself free from the meshes of the old dogmatism.

What has usually figured as the main ground of distinction between the Hegelian philosophy and the pre-Kantian rationalism

has, however, not yet been mentioned. This is the so called 'law of contradiction,' which Descartes and his successors accepted as self-evident, and which Hegel is supposed to have called in question. For such an interpretation of his position, Hegel is himself largely to blame; but it is very misleading none the less. So far from being invalidated, the law of contradiction is the one moving principle of the whole dialectic, not only in pure thought, but in the natural and social orders. Not only have we here no break with rationalism, but there is a bond of union which is worthy of most careful examination.

The current interpretation has arisen, in the first place, naturally enough from Hegel's deep-seated contempt for the school-logic that he found in possession of the field. There was a precious bit of truth contained in it—the classification of the syllogistic moods, for example—but that might all be expressed in a couple of pages. The rest was 'pure fudge,' and he seldom lost an opportunity for pouring his contempt upon it. Almost inevitably, he went too far. The particular form which his excess took was given by his weakness for reading new meanings into old formulæ. Generally, indeed, the meanings thus imported were deep speculative truths, which the idioms of language and the dogmas of religion unconsciously contained—a mode of interpretation which Hegel's evolutionary theory of the relation of thought to the lower forms of consciousness was well adapted to support. But on occasion he could as easily read-in all manner of untruth. Thus in criticising the 'law of identity' (*A is A*), he interprets it as an affirmation of the externality of relations; and the 'law of the excluded middle' (*A is either B or not-B*) he similarly interprets as declaring that all meaning consists in the relation of contradiction. Finally, the law of contradiction (*A is not not-A*) he finds to mean that a contradiction is unthinkable; whereas to himself the truth is that it is not *permanently* thinkable, for when a thought is shown to contradict itself it inevitably undergoes some modification which resolves the contradiction. Now it is true, that Hegel takes issue

with rationalism upon the question of the existence of a body of absolutely clear and distinct thoughts, given by intuition and insusceptible of any modification. But the law of contradiction has nothing to do with the possibility of unclear thought or with the question whether certain categories are clear or unclear. Nor is it involved in the question, whether the thinking of unclear, self-contradictory thoughts is a necessary precondition of the thinking of self-consistent and adequate thoughts. But that self-contradiction is an infallible sign of unclearness and untruth both Hegel and the rationalists agree.

In the second place—and here he is more seriously guilty—Hegel systematically confounds opposition of any sort, either in nature or in society, with the existence of a logical contradiction; just as he also identifies the mutual cancellation of opposed elements with the process of dialectic. Contradiction, he accordingly declares, has a universal *phenomenal* existence. An example may serve to make clear his view. The acid and the base are opposites. Yet each is directly dependent upon the other for its specific characteristics. If there were not acids, a base would not be a base. Either, then, by itself considered, is an unreal abstraction, and it is only in their combination that their truth is realized. Their existence together in the world is thus an open contradiction—*hence their tendency to react*. This, of course, is puerile; and such stuff bulks larger in Hegel's work than one would like to admit. But even here, let it be noted, the contradiction is only phenomenal, not actual. It exists at all times, but only in each temporal cross-section. In the continuous flow of the cosmic process, it is perfectly resolved.

In the third place, there are the numerous express self-contradictions which are to be found in all his writings. But can such outrages upon language be avoided by any man who attempts to work out an evolutionary philosophy? The propositional form, Hegel insists, is incapable of expressing speculative truth, that is to say, of expressing the relation between concepts which are in process of development. No proposition which attempts the

task can be one whit truer than its contradictory. Thus *being* and *naught*, *somewhat* and *other*, *positive* and *negative* are the same and yet not the same; the whole is prior to its parts, and yet they are equally prior to it; there must be a mere given somewhere in the universe, else the whole system of necessary connections has nothing to hang up on—and yet any phenomenon which one attempts to regard as such a mere given shows itself at once to be a link in the chain of universal necessitation. It is startling to common sense to be told that each of two contradictory propositions is both true and false; but it is merely one of the growing-pains of thought. When categories which have heretofore seemed absolute begin to show their limitations, what else is to be expected? The law of contradiction is not thereby abolished. It is simply pointed out that the application of this law implies a certain finality in the terms involved, which they do not always possess.

We repeat that what is especially remarkable with respect to Hegel's treatment of the principle of contradiction is not his real or alleged assaults upon it, but the tremendous scope which he allows it. That no contradiction can be actual, and so eternal, is with him not simply a permanent condition but a motive force—the force to which all progress is due. For all progress is but the becoming explicit of contradictions that are everywhere implicit, and their reconciliation; and this process takes place without the necessity of outside interference, solely by reason of the existence of the contradiction itself. Thus, in the logic, no external reflection, no induction need intervene; in the development of the state no pressure of the natural environment plays a part. It is what the lower form has in it—its organic concept—that determines what it is to be. *The order and connection of thoughts and the order and connection of things are the same.*

This freedom of the development from outside interference has its characteristic explanation, which we must not neglect to note. The logic is independent of experience because it is its outgrowth. The development of the state is essentially inde-

pendent of natural conditions, because man is nature's highest fruit—the mere stress and strain of material forces is already *aufgehoben* in him. But what we would now particularly observe is that *these incorporated forces, though they play no distinguishable part in advancing the development, have an extraordinary power to thwart it*. Even philosophy itself—the absolute spirit in its supreme self-realization—is not undisturbed in its historical growth by the accidents of fortune. And here we come face to face with rationalism in its most pronounced form. *The historical order is explained in terms of something truer than itself*. It is broken up into two parts, an essential and an accidental, and only the former is susceptible of rational explanation or justification.

There thus reappears, despite the unifying conception of *Aufhebung*, the rationalistic cleft between the universal and the particular, the necessary and the contingent. In every phenomenon of nature and mind there is an aspect which must be set down to mere chance—every attempt to explain it will surely come to grief. We must beware of attempting to exhibit the necessity of that which is fundamentally contingent. True philosophy is far from pretending to be competent to any such task. For while the contingent is always the relatively superficial, and necessity in every case underlies it, that does not mean that the former is a mere illusion of ignorance, which the advancement of knowledge can ultimately dispel.

If we ask the reason for this surprising turn of thought, an answer is to be found in the name of the ancient rationalist whom Hegel held in highest reverence, and whose fame he did much to reestablish: Aristotle. There can be no doubt, we think, that Hegel's conception of the irrational element in nature comes directly from this source. But such an answer seldom contains so much as half a truth. The question remains, why Hegel became indebted to Aristotle for the conception—what the need of his own thought was, that urged him to the borrowing.

Let us answer this question with another. How else could Hegel have preserved his sanity? As it stands, the program of

his philosophy is the most magnificent that the mind of man ever conceived: on the one hand, to exhibit in a complete outline the system of concepts by which all thought is organized; and on the other hand to transform the chief results of ancient and modern science into a thought-universe, wherein all should be interrelated by a necessity as absolute as that of pure thought itself. If the dialectic which he professed had included the full particularity of experience, it would have amounted to an oracle of prophetic omniscience.

But while the acceptance of the existing irrational saves absolute idealism from relapsing into a mere charlatanism, this is only at the expense of admitting an irreconcilable contradiction into its theory of actuality. On the one hand, the irrational aspect of the phenomenon is condemned as mere untruth; but, on the other hand, the actual, as compared with this untruth, is itself a mere negative, equally untrue. If history fails to square with thought, so much the worse for history—but also so much the worse for thought. For its relation to the merely historical is an *external relation*, which in no wise affects its intrinsic significance. But because it stands in an external relation, the actual is not the actual, but a mere phenomenon.

Thus the theory of the essentiality of relations refutes itself in very much the same fashion as the dogmatic theory of their externality—and for a similar reason. Each is valid as a description, not of any real human thought, but of a one-sidedly idealized thought. For the old rationalism, the improvement of the understanding consisted essentially in the analysis of concepts; and its ideal was definition in simple terms. For the new rationalism, the improvement consists essentially in the enrichment of concepts; and its ideal is the all-inclusive, self-supporting Idea. Perhaps it is too much to say that either ideal is intrinsically self-contradictory. But as applied to the explanation of human experience, each is alike absolutely futile. The plain fact of the matter is that expanding knowledge means, on the one hand, the *transformation of external relations into essential relations*, and,

on the other hand, the *establishment of new external relations*. In other words, it means the solution of problems in terms which themselves raise new problems. For the externality of a relation signifies simply the existing limit of our knowledge—every relation is external until we have explained it. Whether any relations are absolutely external—that is, whether there are any absolute limits to our understanding, any problems that are intrinsically insoluble and hence not worth the setting—is a question which we need not discuss here. It will be granted, we think, that the idealization of thought by a sweeping-away of its limitations—the conception of a problem-solving function, which has no problems left to solve—is scarcely adequate as a model of correct thinking.

The 'concrete universal' has been Hegel's most important suggestion to later thinkers—one whose fruitfulness has not yet been exhausted. But the theory of the actual as a concrete universal, is, when taken in perfect strictness, as nearly as possible unilluminating. Its whole attractiveness is due to the analogy of finite organisms. In the case of the finite organism, it is possible to see that part in the light of the whole—but only because the whole is itself a part of a larger whole.¹ For the conception of an organism is wholly relative to the conception of an environment. This is the simple sun-clear truth that Hegel never saw. It is only with reference to the environment that there can be any comprehensible unity of the whole organism, to which the functions of the various organs are subservient.

¹Shaftesbury's quaint observation is worth remembering: "When we reflect on any ordinary frame or constitution either of art or nature; and consider how hard it is to give the least account of a particular *part*, without a competent knowledge of the *whole*: we need not wonder to find ourselves at a loss in many things relating to the constitution and frame of *nature* herself. For to what end in nature many things, even whole species of creatures, refer; or to what purpose they serve; will be hard for any one justly to determine: but to what end the many proportions and various shapes of parts in many creatures actually serve; we are able by the help of study and observation, to demonstrate with great exactness." *An Inquiry concerning Virtue*, I, 2, 1.

That is to say, it is impossible to advance by a synthesis of any number of parts or aspects to the idea of an organic whole. It is true that the idea of a universal organism may have for many minds a certain figurative suggestiveness, standing for the fact, that every apparent externality of relation constitutes a problem—that a 'why' may always be asked. But the "point of view of the whole" remains a pure abstraction. It adds nothing to the law of gravitation if we write: "*Actuality is such that every mass attracts every other mass, etc.*"

For this reason, the famous Hegelian dictum, "Everything actual is reasonable," if intended as a criterion of reasonableness, is not so much false as meaningless, because of utterly uncertain application. The actual is the eternal or, at least, an essential stage in the self-development of the eternal. But who, in looking abroad upon human society, can distinguish between what is essential—for, from the point of view of the actual, a thousand years are as a day—and what is superficial and evanescent? The dictum is appropriate only to one who pretends to extraordinary, if not superhuman, insight, and who magisterially announces to the world his distinctions of true and false, reasonable and unreasonable. Let it be admitted, that, as a postulate of moral effort, the dictum is by no means meaningless. "Nothing that is unreasonable is actual," may well stand as the formulation of the demand, that no evil be accepted as necessary, and of the faith, that in the battle of life the right may meet with defeat but can never be conquered.

It is because of his curiously abstract view of the nature of the organism, that Hegel represents its evolution as the mere self-explication of a concept—the environment counting only as a possible disturbing element. And because the process is a self-contained one, it is reasonably described as 'determined by its end.' Thus the development of the chick is due to the fact that the egg is implicitly a fowl; the fowl involved in the egg produces itself. The same line of thought is accountable for the

fact, that for Hegel dissolution and death are mere signs of the imperfect correspondence of the natural organism to its true concept. According to his thinking, a perfect man could never die—except as a sheer accident. That the very conception of the organism should include a complete life-process, that death should be as normal as birth, he could not contemplate.

PART III
THE PRAGMATIST REVOLT

CHAPTER I

THE PRINCIPLES OF PRAGMATISM

No scientific hypothesis has ever exerted a more profound or far-reaching influence upon the thought of a period, than has the Darwinian theory of evolution upon that of the last half-century. Not only have the group of biological sciences been re-created, but there is scarcely one of the mental and social sciences, that has not been in large degree revolutionized. It was, indeed, in the realm of social science, as we have already seen, that the idea of evolution first became effective. But it was not until the work of Darwin in biology, that there existed anything like a scientific theory of evolution, based on wide and intensive empirical study. That is to say, the process of evolution had been conceived in an essentially abstract fashion, without any adequate consideration of the factors which operated in any field or of the manner in which they produced their effect.

The importance of Darwin's work did not lie simply in the fact that it provided an acceptable theory of the evolution of organic species. In the first place, the fact that he was able to furnish a tolerably satisfactory explanation of the evolutionary origin of species—which up to his time had seemed inexplicable—this very fact gave weight to previously existing evidence for such evolution, and opened the way for a universal theory of evolution. In the second place, the bridging of the gap between man and the lower orders meant a transformation of those sciences dealing with essentially human activities. For if man had developed from the condition of a brute, then it must be possible to trace the rise and growth of his activities from instinctive animal behavior. A tremendous impetus was thus given to the application of evolutionary methods to the entire body of mental and social sciences.

And yet amid this wide-spread upheaval of method the science of logic has, until within the last two decades, remained untouched by the spread of the Darwinian theory. There have, to be sure, been researches in plenty into the evolution of concepts in the individual and in society. And the proof of the impermanence of natural types has given a special impetus to such researches—largely because the traditional belief in the fixity of these types had been generally associated with the dogma of the fixity of their concepts. But until the rise of pragmatism no thoroughgoing attempt was made to explain the fundamental notions of logic itself in the light of the selection-hypothesis. The isolation of logic has been the more conspicuous in view of the development of the closely related sciences of psychology and ethics under the application of evolutionary methods, hotly contested though such application has been. The long resistance of logic is, indeed, readily intelligible. The capacity for reflective thought has from the time of Aristotle been regarded as the distinctive characteristic of man—the one essential attribute which eternally separated him from the merely animal. But the evolutionary explanation of an essence is more than a contradiction in terms. It is the forcible collocation of diametrically opposed tendencies of thought. The consequence is that even when an evolutionary origin of the thought-function is conceded, the rationalist has only to advance a *definition* of thought, and thereupon declare that so long as thought has been thought it must have conformed to his definition; so that the consideration of any prior stage in the development is superfluous.

But there is another influence which has opposed the entrance of the new conception of evolution within the realm of reflective thought; namely, absolute idealism. It might, perhaps, be supposed that the Hegelian philosophy, since it is a philosophy of evolution, would be the first to welcome and appreciate the Darwinian theory of organic evolution. A consideration of what the concept of evolution has come to mean under the influence of Darwinism will, however, reveal its thorough incompatibility with the Hegelian conception of the process.

The course of evolution is not conceived by biologists as a dialectic. The forces which bring about the successive stages of the process are not supposed to be completely contained in the nature of the lower forms as such. The course of evolution is not understood as logically predetermined by the concept of these forms. In short, it is not to be explained in terms of mere logical relationship. External circumstances, instead of being unessential, and as likely to obscure as to illuminate the significance of the process, have become determining factors, a detailed knowledge of which is indispensable to the understanding of the evolution. Had external circumstances been ever so little different, the succeeding stages of the process might have been profoundly modified. Thus the later stage can no longer be regarded as the realization of the earlier. There is, to be sure, a certain inclusion of the features of the earlier in the structure of the later; but what features are to be so included, and what excluded, is not determined by the essential nature of the lower form. It may, perhaps, be said, that the full development of man was implicit in the earliest vertebrate forms; but so too were the eagle and the horse and the other existing vertebrate species—and so too were the unnumbered possible forms which might have developed had environmental conditions been favorable. If evolution is a process of conservation, it is equally a process of waste; for the selection of the existing lines of development has been at the expense of countless other possible lines. It is not, then, properly described as the progressive unfolding of a reality potentially existent throughout. In a word, it is not to be regarded as a teleological process.

In view of this transformation wrought in the idea of evolution by the Darwinian hypothesis, it is evident that a treatment of logical problems based on the new conception must differ widely from the logical theory of absolute idealism. In the first place, there is a tremendous difference of standpoint in regard to the nature and position of thought itself. According to absolute idealism, rational thought, since it is the outcome of the process

of organic development, expresses in its own nature the essential truth of that development, comprehends in itself all the earlier (*aufgehobene*) stages. Hence in its own unfolding it is absolutely free, that is to say, self-determining. From the Darwinian standpoint, on the contrary, the nature of thought must be explained by ascertaining the part which it plays in the life of the organism. Thought, instead of being regarded as the end and determinant of organic development, is a product and (more importantly) a moment, or factor, in that development,—a factor whose existence and nature are throughout conditioned by the part it has to perform in organic life. How this initial attitude toward the nature and place of thought affects the treatment of the more important problems of logical theory, it will shortly be our task to consider.

In the second place, it is inevitable that the new evolutionary logic should be distinguished from absolute idealism by a characteristically empiricistic temper; and this we find to be the case. In various respects, the pragmatists of today may justly be claimed as the modern representatives of the school of Berkeley and Hume. This is notably true as regards the place accorded by them to the science of psychology, which with them becomes again the corner-stone of philosophy. That their method and their theoretical results exhibit marked differences from those of the older empiricists is largely to be explained as a consequence of the enormous development of scientific method in general and of psychological science in particular. Speaking broadly, we may say that this development has meant the emancipation of psychology from the presuppositions of the old dogmatism. Perhaps the chief conception that has thus been outgrown is the idea of analysis into elements assumed as final.¹ In psy-

¹"Current sensationalism is a result to which we are led by empirical analysis; and its sensations are simple processes abstracted from conscious experience, last terms in the psychological study of mind. The associationism of the English school is a preconceived theory, and its sensations are, accordingly, productive and generative elements, first terms in a logical construction of mind." Titchener, *Lectures in the Experimental Psychology of the Thought-Processes*, p. 34.

chology, as in chemistry and physics, the dogma of the absolutely simple has no longer any place. This change has been facilitated by the application of evolutionary methods in psychological investigation and the adoption of the functional standpoint. It is not that the modern functional psychologist would necessarily deny the possibility of the analysis of psychological phenomena into irreducible elements, but rather that it is not in such terms that the problems he has to face are to be solved. The essential thing to be explained about a given process is, on the one hand, its functional relations to other processes, and, on the other hand, its genetic relationships. The mere analysis into structural elements is of secondary importance, subservient to the functional problem.

It is, then, on the basis of the functional interpretation of psychological problems, that the pragmatist urges so insistently the psychological treatment of logical theory. The traditional contention of the Hegelian school, that psychological method is fundamentally incapable of dealing with logical problems, is based, he believes, upon the conception of psychology as aiming at a merely mechanical explanation of mental processes. That the contention had some force against the procedure of the old empiricists, he would admit. Certainly the pragmatist would as readily as the absolute idealist point out the inadequacy of such alogical elements as the Berkeleyan *idea* and the Humian *impression* to provide an explanation of logical processes. But what he is more anxious to insist on is the greater anachronism involved in the Hegelian attempt to treat the processes of reflective thought in abstraction from their genetic and functional relations to other human activities.

There is a more general sense, in which the temper of pragmatism is empirical; and that is in its self-professed affiliation with the empirical sciences. For pragmatism is not, at least in its inception, a system of metaphysics. It has stood first of all for the application of empirical scientific methods—and this has meant for the most part the methods of functional psychology—

to certain of the traditional problems of philosophical inquiry. Furthermore it has insisted upon the specialization of these problems, in order to make them amenable to empirical treatment. This has involved the rejection, as illegitimately abstract, of some of the most important of the traditional problems; most notably, the ontological problem, *What is the nature of reality?* and the epistemological problem, *How is knowledge possible?* Thus Professor Dewey writes in the *Studies in Logical Theory* (p. 8): "From its point of view [that of an instrumental logic] an attempt to discuss the antecedents, data, forms, and objective of thought, apart from reference to particular position occupied, and particular part played, in the growth of experience, is to reach results which are not so much either true or false as they are radically meaningless—because they are considered apart from limits. Its results are not only abstractions (for all theorizing ends in abstractions), but abstractions without possible reference or bearing. From this point of view, the taking of something, whether that something be thinking activity, its empirical condition, or its objective goal, apart from the limits of a historic or developing situation, is the essence of *metaphysical* procedure—in the sense of metaphysics which makes a gulf between it and science." A greater contrast than that between this attitude and the Hegelian conception of philosophy, as the imparting of a true universality to the crude results of merely empirical science, can scarcely be imagined.

Pragmatism, as a philosophical movement, is difficult to describe and impossible to define. We shall not attempt to do either. As hitherto, we shall single out for exposition and criticism those features which appear to us to be of central importance for logical theory, paying scant attention to attendant phenomena however interesting—such, for example, as the relation of pragmatism to religious faith. Even with this limitation our task will be embarrassingly complex. To simplify it, we propose to limit the present discussion to the closely connected theories

of meaning and truth, together with the conception of reality which these theories directly imply; postponing to appendices the treatment of the *pragmatic method*, the *will-to-believe*, *humanism* (the theory of a 'plastic' reality), and *immediatism* (the theory that reality is experience in its immediacy).

A further motive for this division of the subject will become so evident as we proceed, that we are constrained to confess it at the outset. The theories to be treated in this place contain those elements of the complex historical whole called pragmatism, which we believe to be on the side of truth—that is to say, true at bottom, and especially true as against the opponents of pragmatism. While we shall criticize these theories at considerable length and—as it seems to us—unsparingly, it will be found that our criticisms are in great part positive and constructive. Our persistent effort will be to exhibit the truth in pragmatism at least as prominently as what we conceive to be its errors and contradictions. In the appendices we shall discuss those doctrines of the pragmatists which we believe to be radically unsound. We hope that upon the whole our treatment will impress the reader as being neither an attack upon pragmatism nor a defense of it. We believe that this philosophy contains too much of good and of evil to warrant either mode of procedure.

The main charge which we shall bring against the central doctrines of pragmatism will be apt, we fear, to strike the reader as somewhat forced and unfair. And yet it is just such a charge as can generally be made out against any revolutionary creed—against Descartes's or Kant's, for example—namely, that it is only half-free from the grip of the traditions which it openly repudiates. It is from this cause, indeed, that most of the appearance of extremism is due. Real extremes meet. The remedy for radicalism of every sort is, not a mixture of conservatism—that never cures—but a more thorough carrying-through of the radical principles. Pragmatism is the first whole-hearted attempt at an appreciation of the significance of Darwinism for logical theory. We propose to show that the attempt has only

half succeeded; that conceptions and methods inherited from the dogmatic empiricism of the eighteenth century go far to vitiate the evolutionary empiricism of today; and that the critical revision of these inherited notions from an evolutionary standpoint will make of pragmatism a far less iconoclastic movement.

Our first endeavor must be to present a brief and simple outline of the central doctrines, permitting ourselves only so much criticism as may be necessary to clearness of exposition. We begin by summarizing the elementary facts and conclusions of functional psychology, which pragmatism has taken as its point of departure.

The conception of consciousness as an instrument lies very close to the fundamental principles of the Darwinian theory. Like every other character of complex living organisms, consciousness has had its history and presumably its origin. How, indeed, it first arose is one of the unfathomed mysteries. But, both in its first appearance and in the general course of its later development, it must have possessed a survival-value which determined its persistence amid the universal struggle for existence. The determination of this survival-value is a matter of considerable interest—far more so than any speculation as to a possible origin. Not the accident or series of accidents, through which consciousness as a variation took its rise, but the utility which led to its selection and perpetuation—that is the matter of vital scientific concern.

The peculiar survival-value of consciousness appears to consist in the fact that it provides a more minute adjustment of reaction to external stimulus than is afforded by any other organic agency. This superiority, again, depends very intimately upon the *learning-process*. By reason of this process existing correlations may, if they prove insufficient, be promptly modified in accordance with the needs of the organism. It is true that suggestive analogies to the learning-process may be pointed out in the field of inorganic chemistry, as well

as in the behavior of vegetable organisms, to which we hesitate to ascribe consciousness. Such facts, however, need not lead us to modify the general proposition that the survival-value of consciousness consists in its enabling the organism to learn. And, practically speaking, the ability to learn is the only test by means of which the presence of consciousness in any organism can be demonstrated.

The most elementary form of the learning-process, and that which furnishes a general type for all the more complicated forms may be succinctly described as follows. If the mode of behavior which is modified by the learning-process be called *habit* (the term being used in its widest sense, including instinctive behavior), then, conversely, the primary function of consciousness may be described as the modification of habit. The inadequacy or inappropriateness of habitual response, from which the activity of consciousness upon any occasion takes its rise, is evidenced by an unpleasant feeling. And the readjustment in which the task of consciousness finds its accomplishment is marked by a feeling of pleasure, which, however, vanishes as the readjustment becomes complete. The task of consciousness may be described as the *forming of a distinction* between the stimulus which has normally provoked a certain response, and a second stimulus, which so far resembles the first as originally to elicit the same response, but with unpleasant effects. The task is accomplished when this latter stimulus has acquired its own peculiar satisfactory response, following it invariably and without confusion; whereupon consciousness gradually disappears. Thus, speaking generally, we may say that consciousness becomes active, only as it becomes necessary in order to eke out the inadequacy of existing modes of reaction—where its peculiar survival value comes into play. So long as the habit serves, consciousness exists, if at all, only as a vanishing quantity.

The phrase, "the forming of a distinction," which we have used, is ambiguous, or rather has a double meaning. The learning-process is at once the development of behavior and the

development of ideas; and the latter phase, like the former, is a differentiation of the parts of a complex from a relatively simple datum. Furthermore, the development of ideas is essentially the development of interests. Amid the primitive formlessness of the infant's world—a formlessness which yet pervades all but a little of our own—only that is distinguished which catches its instinctive attention; and if we adults see more, that is because we have felt more. The function of consciousness in the biological organism being the control of conduct, it is only in and through the performance of that function that its development is possible.

If we examine into the use and context of a newly developed idea, we find that we must recognize: (1) its relation to the relatively simple idea from which it has sprung, as well as to the contrasted idea from which it has been distinguished (and, perhaps, soon also to the more complex ideas to which it in turn gives rise); and (2) its relation to the conduct to which it prompts—briefly and crudely—its genetic and functional relations. Both of these are somewhat indiscriminately included under the term 'meaning'. The terms 'content' and 'import' seem to mark the distinction fairly well, and we shall find occasion to employ them later. As the process of habituation proceeds and conduct approaches the automatic stage, both aspects of the meaning of the controlling ideas suffer gradual decay.

It is the latter (functional) aspect that pragmatists have generally seized upon as constituting the 'meaning' of ideas. Such usage is, of course, in itself perfectly legitimate. The question, whether the genetic aspect has not been unduly neglected, nevertheless remains. And as the pragmatist theory of truth is essentially an evolutionary one, such neglect, if it has occurred, might well have serious consequences.

The following passage, in which Professor James (writing in 1906) summarizes the contentions of Mr. Charles Peirce (as expressed in 1878), exhibits very clearly the conception of meaning generally held by pragmatists. "... Mr. Peirce, after pointing

out that our beliefs are really rules for action, said that, to develop a thought's meaning, we need only determine what conduct it is fitted to produce:¹ that conduct is for us its sole significance. And the tangible fact at the root of all our thought-distinctions, however subtle, is that there is no one of them so fine as to consist in anything but a possible difference of practice. To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve—what sensations we are to expect from it, and what reactions we must prepare. Our conception of these effects, whether immediate or remote, is then for us the whole of our conception of the object so far as that conception has positive significance at all." To the same purport is the opinion of Ostwald,—“All realities influence our practice, and that influence is their meaning for us.” Upon which Professor James comments that “meaning other than practical, there is for us none.”²

So far, then, as these passages are typical, the assertion holds, that for pragmatism the relation of an idea to the vaguer idea within which the distinction occurred that gave rise to it, as well as to the more concrete ideas which may arise by distinction within itself, forms no part of the meaning of the idea. And yet it is by reference to these relations that functional psychology must explain a whole group of conceptions which would ordinarily be regarded as having something to do with meaning; *e. g.*, genus and species, definition, division, and predication generally.

But while the above assertion is formally correct as an account of a prevalent use of terms, it is not wholly just as an appraisal of the pragmatist theory of meaning. It is not simply that certain members of the school may be pointed out as specifically recognizing content as a kind or aspect of meaning,³ and

¹The *pragmatic method*, treated in Appendix I.

²*Pragmatism*, pp. 46–48.

³Note (*e. g.*) Professor Dewey's incisive inquiry with respect to the pragmatic method: “Does Mr. James employ the pragmatic method to discover the *value*

that particular passages to this effect are to be found in the works of the others. The more important fact is that the two-fold conception of meaning—as content and import—is plainly implied in the pragmatist theory of truth; to which we now turn.

Truth is a property which we attribute to our beliefs—so far as we do, indeed, believe in them. Whether the particular beliefs actually possess this property or not,¹ the meaning of the property itself, which is thus attributed to them, is of course unchanged. A method is accordingly suggested for analyzing our conception of truth; namely, the genetic method that consists in observing the conditions under which belief changes and the general features of the process of change—how doubt arises, how speculation proceeds, and how belief becomes reestablished.

As a result of such observation, it is found that truth contains two essential factors, which (we would note in passing) are analogous to the two aspects of meaning already noted. One is consistency² with other beliefs (including, by indirection, the beliefs

in terms of consequences in life of some formula which has its content, its *logical* meaning, already fixed; or does he employ it to criticise and revise, and ultimately, to *constitute* the proper intellectual meaning of that formula?" And below (with reference to the pragmatic determination of the meaning of design in nature, as a 'vague confidence in the future'): "Is this meaning intended to *replace* the meaning of a 'seeing force which runs things'? Or is it intended to superadd a pragmatic value and validation to that concept of a seeing force? Or does it mean that, irrespective of the existence of any such object, a *belief* in it has that value? Strict pragmatism would seem to require the first interpretation, but I do not think that is what Mr. James intends." *Journal of Philosophy, Psychology, and Scientific Methods*, V, pp. 90, 91.

¹Cf. James, *The Meaning of Truth*, p. 183.

²On account of the one-sidedness of the usual pragmatist account of meaning, the writers of the school are unable to give a very definite account of this consistency, harmony, or agreement. We are told simply that we "feel" that certain ideas are in agreement with other parts of experience, "such feeling being among our potentialities" (*Pragmatism*, p. 201, cf. *Meaning of Truth*, p. 101, ll. 1-7). This is the old empiricist faculty of 'comparison' over again, with the important difference, to be sure, that the consciousness of agreement is (or may be) simultaneous with, rather than posterior to, the consciousness of the terms compared. But though the existence of such a faculty, or potentiality, be admitted, the problem certainly remains of determining under what conditions the feeling is felt. Even so, in the case of an externally excited sensation, such as sweet or bitter, we are not

of other men in whose judgment we have confidence); the other is the satisfactory guidance of conduct. The truth of an idea is, then, its workability in combination with our other ideas. Thus the interpretation of a new experience, in such a way as to conflict with a great body of accepted maxims, can hardly ever win our acceptance, no matter how successfully it suggests the conduct suitable to the circumstances. And, contrariwise, however beautifully a theory may harmonize with accepted notions, its persistent failure in practice not only condemns it but casts doubt upon the old notions as well. Change of belief is thus characterized by the *continuity* which belongs to evolution generally. Existing structures and functions are modified as slightly as possible, in accordance with new demands; and, moreover, such modification as occurs is always more apt to attach to recently acquired, than to older (and thus more deeply involved), features.

The truth-formula is most frequently presented by pragmatists in a form which consolidates the two factors. Recognizing that consistency is itself an important subject of human interest, they declare that *the truth of an idea is its satisfactoriness*—including the satisfaction of intellectual interests as well as of all others that may be involved. There may be matter for serious criticism here (as we hope hereafter to show); but in fairness it must be said that a mere confusion, in which the specific character

wholly satisfied with the statement, that the experience of these sensations is a potentiality of our nature. We desire to know the general characteristics of their respective stimuli. It is a pressing problem of psychophysics. Even so the moral-sense school of ethicists, who believed the feeling of approbation to be an original, fundamental endowment of our nature, recognized the problem of determining what the *object* of this peculiar reflective sense was. Indeed, they differed among themselves upon the matter, Shaftesbury, Hutcheson, and Hume having each his own characteristic theory. Now it is clear that logic has at least an equal interest in determining the general nature of the combinations of ideas (or other forms of experience) which are felt to agree. The mere fact that they are felt to agree is so far from being a solution that it is what sets the logical problem.

If we are correct in our interpretation, Professor James and his more immediate friends have formally deprived themselves of the only means of attacking, much less of solving, this problem. That the deprivation is only formal, and can be amended in full accordance with the general spirit of the pragmatist theory, we freely admit.

of intellectual interests is lost sight of, is not to be attributed to pragmatists generally. The consolidated formula is, however, significant to this extent, that the various interests which may be active *summate* themselves in the total effect. The acceptance of a truth by no means implies either its perfect accordance with other accepted truths or the unmixed satisfactoriness of its practical working-out. It is "eminently a matter of approximation." And, as elsewhere in human life, the choice of the best involves a compromise. To insist too rigidly on the theoretical criterion is the part of mere visionaries; to slight it almost entirely for the practical criterion is the part of short-sighted dolts. The average man is content with truth that avoids explicit self-contradiction and saves him from the ruder shocks. In the last resort, however, all this is a matter of individual taste. "We say this theory solves it on the whole more satisfactorily than that theory; but that means more satisfactorily to ourselves, and individuals will emphasize their points of satisfaction differently."¹

It is noteworthy that belief, rather than knowledge, is the starting-point of the pragmatist epistemology. This has at least the controversial advantage, that while the very possibility of knowledge has been questioned, no one has dreamed of questioning the possibility of belief. The theory is thus founded upon patent matter of fact. It has, however, this difficulty. Truth is defined as a property *attributed* to beliefs. It thus remains undetermined whether any belief actually possesses this property; that is to say, is reasonably consistent with all other unquestioned beliefs, and is incapable of serious failure in practice. But the pragmatist, in a genuinely empirical spirit, does not hesitate to take his stand upon the beliefs actually and commonly entertained by men as true. Truths are for him, primarily at least, the truths of actual practice—that is to say, the beliefs that are recognized as true. The distinction between knowledge and belief is then interpreted as one of degree only. Our knowledge is simply the body of our best attested beliefs.

¹*Pragmatism*, p. 61.

What becomes of the conception of an absolute knowledge—of beliefs possessed of absolute truth? It acquires the potent significance of an ideal limit. For the change of human beliefs is by no means altogether a mere fluctuation. In great part, it shows itself to be a gradual convergence; and this is especially true of the history of the sciences. Now a convergence may be conceived as having a finite terminus or as proceeding *ad infinitum*. In the case of the progress of knowledge, however, it is hard to see how the attainment of a terminus could be sufficiently attested. For it has happened repeatedly, that beliefs which for centuries have been regarded as possessing a certainty which nothing could surpass, are found to require correction. Nevertheless it may be admitted, that if a considerable body of science should remain for a great length of time without modification, men would feel obliged—as they have felt under similar circumstances in the past—to regard such knowledge as ultimate. But from the vantage ground of the opening twentieth century, it seems far more natural to regard scientific progress as the convergence upon a goal which will never be definitely reached. The question whether the goal is attainable or not, is a question, which, from the present standpoint of science, leaves the meaning of the goal unaffected; for its attainment is beyond any reasonable expectation. Absolute truth is truth incapable of correction. Whether such truth can be secured, only time can tell.¹

The pragmatist theory of reality offers serious difficulty to the expositor, and that for two reasons. In the first place, its most distinguished advocates are also believers in humanism or immediatism or both; and while they generally endeavor to keep these theories apart, human nature forbids that they should invariably succeed. In the second place, there is, we believe, a frequent ambiguity even in the definitely pragmatist usage of the

¹This holds as a general statement of the pragmatist position in the matter. We shall hereafter have occasion to call attention to a class of absolutely true beliefs, which Mr. James believes to be even now entertained by us. Our belief that two and one make three is an example.

term 'reality.' That is to say, the term denotes either a belief, qualified as knowledge, or the things and relations which make up the object of the belief. In Mr. James's *Pragmatism*, these figure as distinct kinds of realities, with which a new idea must 'agree' if it is to be accepted as true. Now it appears to us perfectly clear, that the belief and its object are not *kinds* of realities (as if 'reality' were a generic term comprehending them both), but realities in different senses of the term. In a later volume the author of *Pragmatism* assumes that "the only realities we can talk about" are objects-believed-in.¹ This we take to be obviously the better statement, and we propose to hold to it in this place.

Reality, then, may be said to have two aspects corresponding to the two factors in truth itself. In the first place, it is that with which our ideas must agree if they are to be true. In the second place, it is that to which our conduct must conform if it is to be satisfactory. More briefly, it is on the one hand the object of knowledge, and on the other hand the condition of success and failure. It is a principal object of the pragmatists to exhibit the essential unity of these two aspects, and they do not consider them separately. We think, however, that for the purposes of the present exposition a brief separate treatment may be helpful.

Reality, as the object of knowledge, is conceived to be relative or absolute, according as the knowledge itself is accepted as relative or absolute. Primarily, reality means the realities of actual experience and expectation. Though, upon sufficient reflection we may admit that these realities have not been definitely ascertained, nevertheless, in so far as we naïvely accept them, we accept them as if they were absolute—that is to say, as perfect standards to which our other beliefs (as well as the beliefs of other men) must, if they are to be true, exactly conform. They are believed in as if their existence were independent of the present belief itself; as if a change of belief would be a change from true to false, leaving the reality itself unchanged. The

¹*The Meaning of Truth*, p. 236. The whole passage is a silent, perhaps unconscious, correction of the looser exposition given in Lecture VI of *Pragmatism*.

distinction between relative and absolute reality is thus a reflective afterthought. Absolute reality is the object of absolute knowledge—the unattained standard, which, if it were present to us, would, indeed, afford an ultimate test of truth or falsity. The conception is therefore, like that of absolute knowledge, based upon the experienced development of human beliefs.

The leading pragmatists are unanimous in protesting against the charge of subjectivism, which their critics have, with almost equal unanimity, brought against them. With respect to the continued existence of sensible things, when not perceived by us, they declare that they regard this as the best supported of all human inferences. And the answer to the occasional charge of solipsism is precisely similar.

Reality in its other aspect, as the condition of success or failure, is assuredly no new discovery of the pragmatists. Their merit—or crime, if you please—is that they have insisted upon the essentiality of this aspect, instead of regarding it as a mere 'external' property. While philosophy and common sense have always been agreed that reality makes a great difference to us, the pragmatists have made themselves conspicuous by maintaining that nothing is real except in so far as it makes a difference to us.

This doctrine should be carefully distinguished from the theory of the will-to-believe, as well as from the allied theory of humanism; and we hope that our treatment of these two theories will make the difference clear. Here we can only call attention to the fact, that in conceiving reality as the condition of happiness, nothing is implied as to any function of desire in legitimizing belief, or as to the efficacy of human desires in changing a 'plastic' reality. Nor is the pragmatist theory of reality a mere optimism. So far from suggesting that evil realities do not exist, it suggests very forcibly that they do exist, and declares that the evilness of such realities is an essential factor in constituting them as real.

The whole line of thought may be comprehended in the single

formula, that *reality is the object of interest*. Herein is suggested one of the most significant scientific developments of recent times, the re-born theory of the objectivity of values. It would lead us too far afield to enlarge upon this theory. Suffice it to point out that whereas pragmatism has been currently confounded with subjective idealism, its real tendency is to extend the boundaries of the objective rather than the subjective world.

CHAPTER II

EXAMINATION OF THE PRINCIPLES

We have confessed to an extensive agreement with the pragmatist theories set forth above. Whether the agreement be regarded as a fundamental one, will doubtless depend upon the point of view. It is natural for us to regard as fundamental in pragmatism the portion of truth which we find there. The pragmatists themselves may easily think otherwise. How important the agreement is, may be judged from the criticisms which we offer here.

A serious weakness in this system, as we conceive it, may be traced to a certain peculiar assumption which has apparently been inherited from the biological ethics of the last generation,—an assumption which pragmatism ought, indeed, to have been the first to denounce. This is, that the whole utility—or, at least, the ultimate utility—of a newly arising function consists in its supplementation of previously existing functions, *in the accomplishment of previously existing ends*. In reliance upon this assumption, a previous generation of evolutionists attempted to discover a 'sanction' for morality in the general characteristics of prehuman evolution; and the present theory follows a similar course with respect to logical thought and consciousness in general.

That pragmatism ought to have rejected such an assumption will appear, when it is reflected that it is a form of that very doctrine of logical priority, the denial of which is vital to the whole revolt against dogmatic absolutism. To assume that new ends must be interpreted simply as means to old ones—or, at most, as new elements in old ends, upon a par with the rest—is to give up the whole instrumentalist position without a struggle. It is to grant to the final ends a species of finality, for which no place should now be left.

Such being the case, we are led to wonder how so obvious an inconsistency came to be overlooked—how ‘adaptation’ and ‘survival’ came to be used, as if they, unlike all other terms, possessed at least a core of absolutely fixed significance. The only answer which suggests itself is that these terms are, indeed, fundamental to the Darwinian theory, in which the psychology of pragmatism took its rise. In that theory, survival passes for the essential precondition of all the various phenomena of life; and adaptation is defined in turn as the precondition of survival. A very cursory examination, however, serves to show that neither conception can maintain its integrity. Survival, for example, changes its meaning most plastically according to the object to which it is referred. The survival of the individual is one thing, and the survival of the species is another; while the survival of the group—which is as compatible with extinction of an original stock as survival of the species is compatible with the downfall of all its individuals—implies no more than that successors to its former membership remain; and the manner in which admission to membership in the group takes place is practically unlimited, varying according to the nature of the group in question. The survival of a custom or an art is similarly independent of that of the group which practices or cultivates it. Taken generally, therefore, survival is one of the vaguest and emptiest of concepts. It means no more than continued *existence*; and, as is the case with existence itself, its meaning changes enormously with the subject of which it is predicated.

Why, then, has the survival of the species been conceded such preëminence as the end of all organic functions? Simply because organisms reproduce after their kind, and such reproduction is, in general, the only means by which traits are transmitted from one generation to another. The term ‘end,’ as used in this connection, is, of course, originally a metaphor derived from human purposes: the end of a function is the interesting outcome toward which it appears to be directed. Strictly speaking, however, the term has come to indicate primarily *an effect which is essential*

to the repetition or continuance of its cause; and secondarily any link in the chain of events leading from the cause to the effect; or briefly, to use a well-worn phrase, an effect determining its cause. Now it is obvious that in relation to organic functions transmitted by reproduction, the survival of the species stands as such an end. If it is not secured, they cease to be; and it is thus a permanent condition in accordance with which their evolution has come to pass. In a general way this applies as well to consciousness as to any other organic function.

With regard to at least certain of the particular forms of consciousness—ideas, sentiments, and the like—a very different account must be given; for, as is well known, these are not perpetuated in the same manner, and accordingly their development is quite otherwise determined. To be sure, such mental processes are necessarily the outgrowth of inherited capacities, and these must be maintained by an unbroken heredity if the whole function is not to disappear. But within the limit thus assigned so definite and extensive a variation has occurred, that to speak of survival in the biologist's sense as the end of consciousness is a monstrous distortion of the facts.

For in the rise of consciousness a second end (in the sense above defined) emerges, namely, the satisfaction of desire, or happiness. That happiness does thus operate as a determining condition in the psychical selection by which the more complex mental processes are developed, is well known; and none have illustrated the fact better than the pragmatists. Their fault, as we conceive it, has been a failure to distinguish accurately between the conditions of happiness and those of survival. This has led to a distressing ambiguity in the use of such terms as 'need,' 'adjustment,' 'failure,' 'working,' etc., referring to the presence or absence of both classes of conditions at once—an ambiguity which has done more to prevent a wide acceptance of pragmatism than any other single circumstance.

In urging the necessity of keeping ourselves clear upon this point, we do not wish to suggest a questioning of the pragmatist

doctrine that all ideas refer ultimately to modes of behavior, that is, to correlations of stimulus and response. This we believe to be substantially true, though with reservations which will be noted hereafter; and we have met with no contemporary discussion which seriously hinders its acceptance. No, our simple contention is that the development of conduct, which is at the same time the development of consciousness, is only remotely and to a limited degree controlled by natural selection; that is to say, that though this development has its beginnings in hereditary tendencies whose perpetuation has been due to their survival value, and though it must remain within the bounds set by the necessity for the continuity of the organic stock, nevertheless, as the process advances in complexity, comparative survival values have less and less to do with its determination. In man, at any rate, mental development is a social phenomenon; and while natural selection is a very slow process, social evolution is an exceedingly rapid one, so that the phases of the latter are increasingly independent of the former's control. Surely this is a moderate statement of the truth which is popularly exaggerated to read, that among mankind the struggle for existence has wholly given place to the struggle for happiness.

An adequate recognition of these facts would, indeed, only serve to strengthen the central doctrines of the pragmatist, for it would enable them to be stated in more consistently psychological terms. In his wholesome desire to explain consciousness in the light of its relations to the organism as a whole, he has lost sight of the great extent to which all other functions have become subordinated to this one. Consciousness is not an end in itself? As nearly as possible it is, for it contains within itself the leading principle of its own development. It is consciously approved satisfactoriness of the conduct to which an idea prompts that determines its stability, and it is conscious dissatisfaction that entails its modification. The dictum of the comparative psychologist, of which pragmatism has made so much,—that it is only upon the failure of habitual adjustment that conscious-

ness interferes, and that when a readjustment is accomplished it retires,—has real significance only for the most rudimentary conscious processes. As applied to more complex processes, it is a mere tautology; for, in that case, adjustment and failure of adjustment no longer refer to the conditions of survival, but to the expression of volitional tendencies whose relation to survival is practically undetermined.

A further advantage to pragmatism is contained in the fact that it now becomes feasible to include thought-activities as such under the term 'behavior' or 'conduct.' So long as conduct was conceived to be essentially determined by its relation to survival, such inclusion was not practicable; since it is not clear how in general a conscious process as such, or the neural process correlated therewith, is capable of modifying the situation of an organism in such a way as to improve its chances of survival. A mere thought cannot ward off a blow or repair expended energies. And so, if a thought was to be regarded as conduct, it was necessarily in a modified and secondary sense, namely as a contributing cause to conduct proper, *i. e.*, directed physical movements. Mental procedure must then be interpreted as a succession of *attitudes*, of preparations for action—like the crouch of the cat making ready to spring. Unfortunately, scientific procedure has commonly no conscious reference to overt action; and when its significance for the guidance of such action is made clear, the relation is not to any particular situation or any particular response. But when conduct is defined in relation to a state of consciousness, such as satisfaction, the difficulty no longer remains. It is only necessary that a specific interest be taken in the issue of the thought-activity as such—the solution of a mathematical problem, for example—apart from any expected effect upon later physical movements; and this is so far from being inconceivable, that it is a familiar daily experience.

But is it correct to say that happiness, as such, is the determinant of intellectual progress and the ultimate term to which the

distinctions of truth and error are reducible? Or ought a specific type of satisfaction to be substituted for happiness, or satisfaction in general? The question is, we think, of far-reaching importance; and before attempting a direct answer we shall try to make its bearing clear by means of a familiar parallel.

The question is closely analogous to that which divided the utilitarians and the moral-sense ethicists in the eighteenth century. Are the sentiments of moral approbation and disapprobation, on the one hand, and that of benevolence, on the other hand, to be explained as consequences of the anticipation of pleasure and pain, produced by a psychical mechanism which merely combines and separates the given elements of human nature? Or are these sentiments qualitatively peculiar, native endowments of humanity for which no derivation is to be found? The alternative consequences for the development of the science soon became apparent. The utilitarians, by reason of the very simplicity of their primary assumptions, were committed to an artificial theory, which did scant justice to their subject. It was easy for the moral-sense theory to be far more appreciative, for all difficulties of interpretation were solved for it in advance. But for the same reason it was barren—the future was closed against it. The signal importance of the application of evolutionary methods to ethics during the last half-century is this, that it has united the advantages of the two older schools. It has permitted the recognition of the distinctive qualitative character of moral values, while at the same time expediting the more thorough investigation of the fundamental relations subsisting between these and other human values.

It is a position analogous to this last, that we should expect to see taken by the pragmatists. But they have not taken it. It is the dead level of utilitarianism that they have sought. This is the more surprising, since all the materials for a synthetic view would seem to be present to their hand. Mr. James, in particular, recognizes the existence of a 'logical sense,' that is to say, a specific feeling of consistency. But of the theoretical

possibilities lurking in such an assumption, he appears to take very little account.

The issue is formulated by Mr. James with great distinctness. "The opponent here will ask: 'Has not the knowing of truth any substantive value on its own account, apart from the collateral advantages it may bring? And if you allow the theoretic satisfactions to exist at all, do they not crowd the collateral satisfactions out of house and home, and must not pragmatism go into bankruptcy, if she admits them at all?'" The essential portion of his answer (to which far too little attention appears to have been given) is as follows: "At life's origin any present perception may have been 'true'—if such a word could then be applicable. Later, when reactions became organized, the reactions became 'true' whenever expectation was fulfilled by them. Otherwise they were 'false' or 'mistaken' reactions. But the same class of objects needs the same kind of reaction, so the impulse to react consistently must gradually have been established, and a disappointment felt whenever the results frustrated expectation. Here is a perfectly plausible germ for all our higher consistencies. Nowadays, if an object claims from us a reaction of the kind habitually accorded only to the opposite class of objects, our mental machinery refuses to run smoothly. The situation is intellectually unsatisfactory. . . . In some men theory is a passion, just as music is in others. The form of inner consistency is pursued far beyond the line at which collateral profits stop. . . . Too often the results, glowing with 'truth' for the inventors, seem pathetically personal and artificial to bystanders. Which is as much as to say that the purely theoretic criterion of truth can leave us in the lurch as easily as any other criterion."¹

Are we not justified in the remark, that this explanation is typically utilitarian? All of the old machinery is at work. Certain experiences are viewed with an immediate pleasure, that is

¹*The Meaning of Truth*, pp. 96 ff. The whole passage is too long for quotation, but the omitted portions are almost equally interesting and significant.

to say, desired as ultimately good. The necessary or convenient means of obtaining them are then desired for their sake. Prominent among these means is the appropriate conduct. Conduct is generally more efficient when it is consistent; hence consistency comes to be desired as a means to efficiency. And then, as in the case of any other means to an end, the end drops out of consciousness, and the means is desired for its own sake.¹ It is particularly to be noted, that by this last step it is not meant that the criterion of consistency becomes independently sufficient to establish truth. Intellectual interests are simply a new class of interests to be provided for—normally bound up very closely with the rest, it is true. Intellectual values are simply one class among others, varying greatly in importance from man to man. The criterion of consistency, if pushed to extremes, is as likely to lead to error as any other.

Once again, therefore, we find the emergence of a new end, or controlling resultant, evaluated in terms of a previously existing end—in this case, the total satisfaction resulting from each particular voluntary act. Here also the assumption appears to us to be unwarranted.

When we examine the relation in which a belief stands to a particular course of conduct dictated by it, it is obvious that this relation has more than one side. The truth of the belief tends, in general, to ensure the success of the conduct, and the success of the conduct tends, in general,² to confirm the truth of the

¹We are speaking here of a similarity of scientific standpoint and method. The similarity of results is nowhere more strikingly exhibited than in the following extract, though similar quotations might be multiplied almost indefinitely: "Satisfactoriness has to be measured by a multitude of standards, of which some, for aught we know, may fail in any given case; and what is more satisfactory than any alternative in sight, may to the end be a sum of *pluses* and *minuses*, concerning which we can only trust that by ulterior corrections and improvements a maximum of the one and a minimum of the other may some day be approached." (Ibid. p. 56.) This is what we have alluded to as the *dead level* of utilitarian theory.

²If knowledge were perfect, it would, no doubt, suffice to guarantee the success of every particular endeavor—in the hopeless case we would tamely submit. But such knowledge as we have cannot do this. There is always a margin of uncontrollable variation. Contrariwise, the particular non-fulfilment of expectation

belief. In the long run, true belief is an indispensable and most potent condition of happiness, and it would be a careless view of the thought-function that would overlook this fact. But with any particular belief the case may be very different. The effect of a belief may easily be to plunge a man into despair; and it then finds its confirmation as aptly in the catastrophe that follows as the most ardent hope could find it in the most complete success. In either case, the total satisfaction of the agent is irrelevant, so far as the truth of his belief is concerned. The fulfillment of expectation, which constitutes verification, owes nothing of its logical significance to the happiness or misery of the conscious agent.

In the type of conduct by which human knowledge is most efficiently furthered—namely, the scientific experiment—the only interest felt to be at stake is the confirmation or rejection of a theory. The “collateral profits” to be expected are often practically *nil*. It is true, that the general result of successful scientific endeavor is an immense enlargement of the means of human happiness. Bacon was surely not in the wrong when he declared that fruitfulness in useful inventions is a fair test of the healthful condition of the sciences. But that does not alter the character of the specific inquiry. Its outcome does not wait for its truth upon the benefits derived from any particular application.

We thus find that the relation between the love of truth and the totality of our interests is quite similar to that between happiness and survival. While very largely in mutual accord, truth and happiness are nevertheless distinct ends, even where they appear to coincide. From the point of view of utility, the adequacy of a concept is on a par with the soundness of a limb. From the point of view of truth, the success of one well-planned effort is not a perfect negative criterion of truth. The repeated resurrection of theories long thought dead and buried is striking proof of this. All our formulæ, as applied in action, contain an ‘in so far as’ or an ‘other things being equal.’ It is generally possible to say, with the bungling professor of chemistry: “Gentlemen, the experiment has failed; but the principle still holds true.” The very imperfection of science gives it a certain independence of the individual datum.

fort is on a par with the expected; but unavoidable failure of another. Moreover while it is true that within wide limits the course of scientific progress is determined by all manner of human interests, yet in detail it is the specific interest in truth that is of determining importance. The statement, that the true is that which, now and in the long run, is the expedient in thinking, is doubtless correct of truth in general, but it may be absolutely false as applied to any particular truth. That may amount simply to an increase of misery.¹

A second ground of complaint which we find against the pragmatists is that in their inductive study of the meaning of truth—proceeding, it will be remembered, by an analysis of the process of change of belief—they deliberately ignore a distinction, which has existed from the earliest recorded times, between warranted and unwarranted change of belief. They deliberately ignore it, apparently because they believe that to give it recognition would unduly prejudice in advance the results of their investigation. Pragmatism stands, above all else, for open-mindedness and candor, and wishes to be, as far as possible, unhampered by traditional canons of truth. We believe that in this matter its apostles have overreached themselves.

The following sentences from *Pragmatism* will sufficiently illustrate our meaning. "Of whatever temperament a professional philosopher is, he tries, when philosophizing, to sink the fact of his temperament. Temperament is no conventionally recognized reason, so he urges impersonal reasons only for his conclusions. Yet his temperament really gives him a stronger bias than any of his more strictly objective premises. It loads the evidence for him one way or the other, making for a more sentimental or a more hard-hearted view of the universe, just as

¹It is fair to note that Professor Dewey has protested against the identification of his own view with the one here criticized. "I have never identified *any* satisfaction with the truth of an idea, save *that* satisfaction which arises when the idea as working hypothesis or tentative method is applied to prior existences in such a way as to fulfill what it intends." *Journal of Philosophy, Psychology and Scientific Methods*, Vol. V, p. 94.

this fact or that principle would. He *trusts* his temperament. . . . Yet in the forum he can make no claim, on the bare ground of his temperament, to superior discernment or authority. There arises thus a certain insincerity in our philosophic discussions: the potentest of all our premises is never mentioned" (pp. 7 ff.).

This account appears to be an understatement, or a misstatement, of the facts in several important respects.

1. It is not simply the professional philosopher, but the scientist of every shade, that attempts to eliminate, as far as possible, the temperamental factor from his results. Mathematician, physicist, biologist, sociologist—if this is a conspiracy, they are all in it.

2. The restriction is not due to professionalism. If it be a piece of scientific tradition, at any rate it does not belong to the bureaucracy of science. The free lance is as much bound by it as the member of six academies.

3. The restriction does not apply simply to temperament, but to every other peculiarity that can affect the general verifiability of the results. This does not mean that a perfect elimination of the individual factor is possible. But it means that no effort is spared to carry the elimination as far as possible. The 'personal equation,' by which astronomical observations are corrected, is typical of such effort. Even a claim to exclusive sources of information, except as it may be substantiated by rigid cross-questioning, is of little avail to the man of science, though appropriate enough in the prophet. When an unconfirmed observation is accepted as correct, it is only on the basis of a critical examination of the general scientific record of the observer; and even then it is usually regarded with some degree of suspicion. A claim to peculiar faculties of intelligence—such as the æsthetic world-view of the German romanticists—may inspire enthusiasm in a religious or philosophical sect, but the progress of science invariably discredits it.

4. That the philosopher—or the scientist—trusts his temperament, is ambiguous and only half true. He distrusts it in general,

just because he knows that he is in danger of trusting it in the particular instance. It is a bias to be allowed for, as far as possible. We distrust our optimism, we distrust our partisanship, we distrust our love of simplicity; otherwise we are less competent as sociologists, as historians, or as physicists. Precisely the same is true of other sources of bias.

5. Where individual precautions are insufficient to eliminate the effects of bias, public discussion and criticism are expected to carry the process further. As Mr. Titchener has recently said, —“Every one of us has his natural inclinations to overcome; and if I lean towards sensationalism, why, the imageless minds, the minds of the extreme verbal type, lean just as strongly in the opposite direction. . . . Well! it is from the clash of these individual psychologies that a generalized psychology must arise.”¹ Mr. James commits a double oversight when he writes: “The potentest of all our premises is never mentioned.” It is true that it is not mentioned by the advocate, except where he candidly distrusts himself; but this is because he believes he has sufficiently discounted it. And there is little risk of its not being mentioned by the *other man*.

6. The distrust of individual bias, in oneself or others, is not a recent phenomenon. It extends back to the beginnings of self-conscious scientific endeavor. Among the fragments of Heraclitus we find: “Understanding is common to all. . . . And though reason is common, most people live as though they had an understanding peculiar to themselves. . . . They that are awake have one world in common, but of the sleeping each turns aside into a world of his own. . . . It is not meet to act and speak like men asleep” (B. 91, 92, 94, 93; Fairbanks tr.). On the other hand, it must be confessed, this sentiment is found to be more widely spread and more powerful, as the advancement of science proceeds. Where science is so far undeveloped as to be closely bound up with religious belief, or otherwise subject to religious influence, trust in one’s temperament is proportionately common.

¹*Experimental Psychology of the Thought-Processes*, p. 22.

7. We believe, with Mr. James, that in no department of science is the complete elimination of the individual factor probable; but this does not affect the question whether such elimination, so far as it is possible, is a distinct desideratum. At the same time it is worthy of remark that a vast body of knowledge exists, in which the process has gone so far that the individual factor is very difficult to detect; nay, that there are fields in which we are not in a position to demonstrate it in any detail, and can at most only infer its existence from very general considerations. This is notably the case with the mathematical sciences, which are, and have been, almost universally accepted as absolute truth. But, aside from these sciences, the desideratum of universal acceptability has been progressively realized. To be sure, as science advances, more and more questions are raised that can as yet be answered only as temperament suggests; and there are also questions which have vexed men for ages, and which, so far as we are aware, have never been put in the way of a universally acceptable solution. But it remains true that increasing numbers of problems, and even whole realms of speculation, where tastes and whims formerly reigned supreme—philology, for example—have been brought into an orderly subjection to principles of generally recognized cogency.

It appears to us that these considerations are sufficient to show that the lack of recognition of temperament as an evidence of philosophical truth is not due to any mere prejudice. The cause certainly lies deeper. As we have previously remarked, a larger induction with respect to the conditions of belief, one which embraced, not simply the causes which might at any time produce belief, but those which were confirmed by reflective criticism, would have led to a more trustworthy theory of truth. There is something admirably bold in the philosophical enterprise which is committed to "no rigid canons of what shall count as proof." But the actual procedure of the pragmatist makes the distinction between proof and sophistry, between argument and persuasion, not simply uncertain but altogether illusory.

Pragmatism is notable for the first unreserved adoption of the evolutionary standpoint and method in logical research. Its advocates have been most bitterly reproached by conservative thinkers for admitting into philosophy a developing truth. We believe, however, that a more valid criticism might be expressed in precisely opposite terms. The pragmatists hold that *truths* have developed: by which they mean no more than that doctrines which in former times were entitled to the most complete possible credence have given way to others which we now know to be more adequate. But of truth itself they have an altogether static theory, a theory couched in a definition which applies equally to the crudest anticipation of the brute and to the subtlest abstraction of the scientist—nay, even to absolute truth, if such there should ever be.¹ That the ascription of truth should mean more at one level of human experience than at another—that there should have been a development of the species of truth of which judgment is *capable*²—they have apparently not contemplated as a real possibility. In short, our opposition to the pragmatists, like their own to Herbert Spencer, is due to the fact that they have not carried their evolutionism far enough—that the leaven of the old dogmatism still works in them.

And yet all the materials for an evolutionary conception were present to their hand; and in one way or another some account is taken of them—with the result of leaving the subject in an almost inextricable confusion. Thus, according to *Pragmatism*, the truth of an idea is experienced as its ‘agreement’ with ‘reality’; ‘reality’ consisting of (1) the things and relations of common sense, (2) relations between purely mental ideas, and (3) other accepted truths; while ‘agreement’ is agreeable leading-on from the idea in question to other parts of experience. Now, in the first place, this agreeable leading is diversely described, sometimes as pleasant on its own account by reason of a peculiar human susceptibility to the harmoniousness of experiences—this

¹Cf. James, *The Meaning of Truth*, pp. 182–3.

²The suggestion might have come from Hegel, had he been more sympathetically read.

is the original statement (p. 202), but it is almost immediately lost sight of—and sometimes as pleasant by reason of the character of the object to which it leads. That is to say, the pleasantness sometimes attaches to the process, sometimes to the result, without our being informed whether either or both modes are necessary to truth. In the former case, moreover, in addition to the specific pleasantness above mentioned, an appeal to individual or conventional taste may be a factor—the taste for simplicity, for example. In the second place, the knowledge of the second class of realities (the relations between purely mental ideas) is altogether independent of the eventualities of experience. Ideas in agreement with such realities are at once obtained by inspection, and are not subject to confirmation or correction.¹ If the results of conduct which they in part control are unsatisfactory, the fault is invariably charged elsewhere: things have been incorrectly subsumed. This anomaly has doubtless struck every reader; but we know not if it has been generally noticed that the whole passage might have been transcribed from Locke or Hume.² A similar account in *The Principles of Psychology* is in fact declared by Mr. James simply “to make a little more explicit the teachings of Locke’s fourth book” (p. 662). The pragmatist theory of truth is only verbally brought into connection with the knowledge of the relations in question. Agreement is said to be still “an affair of leading”; but nothing of the sort is made out. The failure of pragmatism is concealed by a borrowing from the old dogmatism.

We believe that the development of the judgment is marked by increasing definiteness and increasing universality, that is to say, by the greater and greater delicacy with which it is contradicted or confirmed by experience, and by its gradual transcendence

¹We recall the statement in Mr. James’s *Principles of Psychology*: “The pure sciences form a body of propositions with whose genesis experience has nothing to do” (p. 641).

²Cf. *Pragmatism*, pp. 209–10 with (*e. g.*) *Treatise of Human Nature*, Book I, Part III, Section 1. Hume, to be sure, instead of describing the *terms* of the relations as ‘purely mental ideas,’ enumerates the classes of relations to which the account applies.

of the limits of the particular interests and the particular occasion which have called it forth. In what follows we shall devote our attention more particularly to the latter aspect of the development, without, however, wholly disregarding the former.

Let us note at the outset what is meant by the relativity of the judgment to the particular occasion. An illustration may help us here. Suppose that upon a piece of paper two geometrical figures are drawn with considerable care. We call the one a circle and the other a rectangle. Yet we are aware that a microscope would reveal irregularities of curvature in the first figure and inexactness of angles in the second, and even that it would taken an infinite amount of correction to make the first figure a perfect cricle or the second a true rectangle. If we are to speak accurately we should have to confess that the one figure exemplified circularity no more than the other; and, on the other hand, that we could no more truly refer to the second as a rectangle than to the first. But we could conform to accuracy in speaking, only on the penalty of speaking only in negatives. If the concept of the circle were only to be applied with mathematical exactness, it could never be identified with any concrete phenomenon at all. What determines the applicability of a concept in any particular case may vary greatly. We may be willing to accept a figure as a circle only when the most accurate measurements obtainable fail to carry the correction further, and when, although we may on general principles feel sure that the figure must deviate from circularity, we are unable to point out just how and to what degree it does so deviate. In the vast majority of cases, however, the degree of accuracy which we demand is not determined by the extreme limit of the finest instrument manufactured. Generally we are satisfied with what looks 'round' to the unassisted eye; and often we do not stop to notice even palpable irregularities.

What makes the difference? The answer is obvious. It is the exigency of the occasion. To speak of the inaccuracy of a given judgment as *negligible* implies a reference to an end that

is to be served. In a process of calculation the amount of inaccuracy which we can tolerate in the premises depends on the degree of accuracy which is required in the results. Thus the captain of a disabled ship, whose sole object was to reach shore, might be quite content with the accuracy of observations which showed his position within a fraction of a degree, provided the nearest land were a large island to the westward, extending over several degrees of latitude. The Arctic explorer, who believed himself to be near the pole, would find such rough calculations of his position to be absolutely useless. The conclusion which the captain would wish to draw would be merely the general direction in which to sail; while the conclusion desired by the explorer must be the exact direction in which, and the exact distance to which he must change his position.

But though error may be negligible is it not still error? Is not the false judgment, which is near enough to truth for practical purposes, still false? Granted. But *suppose the judgment does not pretend to exactness*—what then? We have an immense number of common-sense terms, which serve our purposes excellently, but which are not to be rigidly defined. Is a child of two a *baby*? Is a bachelor of thirty-five still *young*? How many grains make a *heap*? And even mathematical terms may be toned down by a cloudy modifier. Is it true or false that the earth is *nearly* spherical, or that San Francisco is *about* three thousand miles from New York? The answer is indeterminate, unless the requirements of the particular occasion determine it. How largely our judgments are of this character is evidenced by the polemical success of the ancient Megarian eristic, which was based upon the principle that all our judgments are similarly indefinite. Perhaps they were not wholly wrong in their opinion.

But scientific judgments evidently aim at a validity which is higher than this, and that is why terms like *heap* and *baby* fail to serve their turn and are replaced by a technical vocabulary. The ideal is a truth that shall remain true for all possible purposes and in all possible situations. But this ideal is assuredly not

attained at a bound. The validity of scientific laws is not dependent, to be sure, on the particular concrete use to which we may choose to put them. But their significance and truth may still be conditioned by the nature of the results which we expect in general to derive from them. On what grounds, for example, do we judge the validity of the principle of classical political economy, that men seek to gratify their desires by the least exertion? Most assuredly we should not judge it to be invalid, because as a matter of fact we find exceptions to it. That men often rush onward in their pursuit of a coveted prize without pausing to choose the shortest way, that exertion once undergone as a necessary means to some desired end may come to be desired for its own sake, are facts which may very well be regarded as negligible in this connection. What does determine the validity of the principle as a law of economics is its general serviceableness in the explanation of a certain class of human actions, namely, commercial intercourse. How serviceable such a general principle will prove to be, depends very largely upon the degree to which the science has at any given time carried its analysis of the particular phenomena with which it deals. As a science proceeds it becomes more ambitious. It is led to correct its general laws, not by the mere finding of exceptions to them—for the exceptions as such might be treated simply as the operation of a counter-tendency—but because there is developed a more adequate appreciation of the particular phenomena which the law purports to correlate. Laws are revised, not because they are false, but because they are shallow. This may very well be seen in the recent history of the very case which we have just mentioned, the classical abstraction of the 'economic man.' The truth of the conception of the 'economic man' is questioned today, not because of its mere abstractness, but rather because it is too rough and ready an affair for the purposes of present-day economics. A more careful study of the operations of a market, a finer analysis of the phenomena of supply and demand, a deeper insight into the nature of value, due in part to investiga-

tions in allied sciences—all these are tending so to transform our ideas of the functions performed by the 'economic man,' that the classical description of him is no longer appropriate.

What we find to be true of this principle of economics applies in some measure, we believe, to all general laws. The validity of a universal principle is not a matter of its own individual adequacy as a description of reality; nor, again, is its validity relative to the whole existing body of human knowledge (if, indeed, we can speak of such a thing). It may correctly enough be said that the validity of such a principle depends upon its place in the developing structure of our knowledge, if we remember that this place is not definitely determined, but is exceedingly variable. A law is not judged as true because it marks the limit of human knowledge and because we are not able to correct any given formulation of it. Its truth is always a matter of context. It is valid if we find a certain harmony between the character and degree of its abstractness and the character and definiteness of the conclusions in view of which it is asserted.

A process of reasoning can proceed only by assuming a set of premises, partly explicit and partly implicit, as valid for the purposes of the argument in hand. Without such fixed point of departure, no coherent reasoning would be possible. The hypothetically valid premise is a fulcrum by means of which we move the unwieldy masses of fact and theory with which our thought is to cope. But to make an assumption with regard to any concrete subject is to make an abstraction; it is to single out certain characteristics, and to regard these out of connection with others which are equally constitutive of the subject in other relations. What is thus singled out and regarded as the nature of the subject is what is relevant to our purpose in thinking of the subject at all. And what is disregarded as negligible is what is irrelevant and foreign to our interest. Hence it happens that for the purposes of some other argument it may be possible and even necessary to assume other and often contradictory propositions concerning the same subject, which are then regarded as valid, while the

others are supposedly invalid. To think at all we must assume something as true; and what we assume depends upon the purpose of our thinking, the kind of conclusion (though, of course, not the particular conclusion) to which we intend our argument to lead.

Thus, whether our assumed premise regarding the subject 'man' is that he seeks to gratify his desires by the least exertion, or that he possesses a strong religious sentiment, depends upon the nature of our interest. True, in this case the assumption of one of the propositions as valid does not involve the denial of the validity of the other proposition. For the purposes of the economist, the fact that man is religiously inclined is simply negligible—it is a meaningless statement so far as his thought is concerned. It is easily seen, however, that the incompatibility between propositions concerning the same object, used as premises on different occasions, may amount to explicit contradiction. A remarkable instance of this is found in the physics and biology of the eighteenth century. While the latter had yet to appeal to the intervention of creative power to account for the origin of species, the former had long excluded all intelligent causes from the explanation of the cosmos. One may say that in order that physics and biology might exist, what was true in the one had to be false in the other. And although this particular contradiction no longer exists for contemporary science, there are other no less serious and fundamental difficulties which have arisen in its place. Thus, of the alternative hypotheses of psychophysical parallelism and interaction, the one is preposterous from the point of view of the biologist, who can only regard as absurd the selection and development, on so great a scale, of a function in no wise connected with survival; while the other is no less unacceptable to the modern physicist. To be sure, such a contradiction constitutes a problem for science, and one which in no particular instance could be branded as insoluble. But we should regard as chimerical the hope that the various sciences will ever be so fully coordinated that the validity of their several laws will involve a complete mutual compatibility.

But what is thus true of science in those fundamentals which mark its grand divisions is true throughout of the unsystematic thinking of common sense. The exigencies of life force us constantly to make assumptions, whose inconsistency becomes manifest upon the most cursory examination, but which we have neither occasion nor opportunity to harmonize. We must act and act again, and the purposes of our conduct determine for us what is essentially true of the surrounding world. The scientific judgment, whatever may be its faults, is better than this. Its ideal may be unattainable, but the advance in that direction is none the less real and important.

The highest level of universality yet reached is that of the mathematical sciences; and, indeed, in common opinion they are altogether removed from dependence upon the particular. The mathematical stage is that to which every other science is supposed to look forward as its ultimate perfection. The exceptional position of mathematics has usually led philosophers to derive them as a separate sphere of knowledge, from a separate faculty of the mind. Their axioms are intuitions of reason.

Now in the case of mechanics, the patent historical fact that its laws have been only gradually revealed by observation and experiment, suggests very forcibly the opposite conclusion, that the certainty and absolute exactness of these laws are illusory—as illusory as the primitive notion, which persists even in so astute a thinker as Epicurus, that all things tend to fall downward in parallel lines. Newton and the modern world have not been more confident of the truth of his laws of motion, than Epicurus and the greater part of the ancient world were of this other principle—or than Aristotle and his followers were of the division of natural bodies into celestial and terrestrial, the former class moving in circles, and the latter, under the influence of gravity and levity, in straight lines. Logically, have not all these principles stood upon the same basis? They have been universally descriptive of the known facts of the matter, with an exactness (within the limits of observation) surpassing the delicacy of any

possible correction. To be sure, our present observations cover an enormously wider range and are likewise vastly more delicate; but these differences are differences of degree. An impartial survey of the history of mechanics certainly disposes one to the opinion, that its laws, as compared with those of economics (for example), simply represent a higher level of universality and exactitude—probably not the ideal level.

Various suggestions have been made, looking toward a reconciliation of the intuitional theory with the facts of history. Two important types of suggestion are worthy of particular notice. The first is the theory of Aristotle and Herbert Spencer, that while the attention of men has been led to mechanical principles along the devious and uncertain paths of observation and induction, yet, when once clearly brought to mind, the principles are intuitively self evident. Spencer's version is modernized by the introduction of an evolutionary explanation of the origin of the intuition; and it is reinforced by the consideration that (in the case of all the principles for which he claims *a priori* certitude) the supposed experimental proofs invariably take for granted in some connection the truth of the principles which they purport to establish universally. This last, however, amounts only to showing that the principles are tested as working-hypotheses: and the theory remains eminently plausible, but wholly gratuitous. The evolutionary explanation moreover, brings with it the disquieting suggestion, that while the intuitively known principles may be self-evident, in the sense of producing a quasi-instinctive conviction of their truth, they need not for that reason be wholly removed from reflective criticism. The adaptations which nature produces are commonly no better than they need be—with a generous margin of safety, of course. If Newton's first law of motion were no truer than the law that falling bodies tend to move in parallel lines, an intuitive acceptance of it would be no less explicable for that.

The other type of mediating theory—represented most ably by Poincaré—gives up the hypothesis of an intuition of mechani-

cal laws, and regards them as supported only by approximate verifications; nevertheless it maintains that they are universally and exactly true. They are experimental laws exalted by *convention* into absolute principles; and they owe their security to the fact that they cannot be submitted to any decisive experimental test, because they apply perfectly only under conditions which surpass the limits of possible observation.¹ The theory certainly is not without attractiveness. According to the first law of motion, a body under the influence of a single force moves in a straight line. No body, however, can be pointed out that meets this condition. On the contrary, the forces acting upon every body within our notice appear to be unlimited in number. To find an exact application of the law we should be forced to imagine a body at an infinite distance from the rest of the universe. Similarly, the law of the conservation of energy involves the notion of a closed system, a notion for which no corresponding object can be found except the universe as a whole. So, too, in the case of the lever. The formula which describes its action requires that its fulcrum be a mathematical straight line, a condition which we find nowhere realized. The endeavor to find the perfect lever simply leads us to dissect the visible lever into smaller and smaller segments, without a real expectation of ever arriving at a satisfactory conclusion.

But now let us ask whether it is in such application as this that the significance of these laws really consists? Do we not see the realization of the first law of motion in the missile which is thrown from the hand? To be sure, neither is it acted upon by a single force, nor is its course a straight line. But we say that in so far as other forces are negligible in comparison, the course is indeed a straight line. And do we not find the law of the conservation of energy realized in the relation of the food we eat to the work we do? Here again, to be sure, there are other sources of energy and abundant avenues for the escape of the energy developed; but even in so crude an example as this, we

¹*Science and Hypothesis*, pp. 98-100.

would hold that the operation of the law is unquestionable—that it is merely concealed and not held in abeyance. And, finally, the principle of the lever we find actually operative in the iron crowbar, which, resting on one log, moves another. And let it be considered that apart from such concrete instances as these, the laws in question have no meaning for us. It was not from the consideration of infinite distances, or of the universe as a whole, or of the ultimate constituents of matter, that these laws were derived—so much is obvious. And their actual utility in the interpretation of our every-day life, as well as of our scientific experience, is enormous. To suppose that their *true* application is something utterly different from any application we ever actually make of them is trifling with common sense.

No, these laws, like other laws, are instruments by means of which we analyze phenomena. They are demonstrated, not from 'pure' instances, but from instances in which disturbing factors are as far as possible eliminated; and, both in the more simple and in the more complex instances, their significance is that of the description of a contributing factor in a total process. It is, indeed, to this fact that the exactness of the laws is due, for this is but complementary to the confessed insufficiency of the analysis. All inexactness is attributed to further, as yet undistinguished, conditions. But to say that the laws are approximately verified under approximately perfect conditions is to understate their experimental basis. They are verified with *less* and *less* average inexactness as the conditions *approach* perfection. M. Poincaré's theory takes no account of this all-important fact. And it must be added, that even though no single decisive test can ever overthrow these laws, yet, if with increasingly delicate observations the average error should ever fail to decrease, they would be regarded as disproved in their present form, and would have to be materially corrected.

On the whole, we find no sufficient reason for placing the principles of mechanics in an absolutely different category from those of economics. The essential difference appears to consist

in the nature of the abstraction which is made in the two sciences. The laws of economics are protected by an 'other things being equal,' where there is by no means a definite conception as to what these other things may possibly include. In mechanics there is no 'other things being equal.' The antecedent of each formula *purports*, at least, to set forth the precise conditions under which the consequent must follow. Aside from this we can only say that mechanical laws represent a far higher grade of universality and precision than economic laws have attained, or, very possibly, will ever attain.

The case of geometry and that of mechanics hang closely together. It is known that the principles of the two sciences are so related that considerable alterations can be made in either and sufficiently compensated by corresponding alterations in the other. A non-Euclidean geometry, coupled with its appropriate non-Newtonian mechanics, can describe our world as exactly as the Euclidean can do. In short, geometry is recognizedly a branch of applied mathematics—an experimental science which has long since reached the deductive stage. If mathematicians sometimes appear to take it otherwise, that is because they have re-defined the term. It then no longer professes to treat of the space-relations of our experience, but is, as the phrase goes, a science of 'cross-classification.'

There remains only pure mathematics—that is to say, formal logic and the sciences of number and order deducible from formal logic—as a possible obstacle to an evolutionary view of scientific validity. We are inclined to the belief that this also is no insuperable obstacle,—that logic, like geometry and mechanics, represents a stage in the development of scientific universality, not the ideal consummation. The numerical formulas (such as Kant's notorious $7 + 5 = 12$), upon whose *a priori* certainty so much stress was formerly laid, are in themselves, as has been definitely shown, analytical propositions and, indeed, absolute identities: the definitions of the two members of the equality can always be reduced to an identical form.¹ The vital question is whether the under-

¹Cf. L. Couturat, *Les Principes des Mathématiques*, p. 255, n. 3.

lying concept of number itself, and below it the concepts of implication and inclusion, are absolutely final. This we see no sufficient reason to believe. On the contrary, the utterly unexpected development which the concept of number has recently undergone through researches in the theory of infinite numbers is an index of the possibilities which may yet be in store. Nothing could ever have seemed more necessary than that if $2X = X$, $X = 0$; and yet we know today that there is a distinct class of other roots. The old number-theory, which was thought to be absolutely true, is seen to be true only within a certain limitation, namely, that the numbers considered be finite. It has been *aufgehoben*—refuted as absolute, and taken up and preserved as part of an ampler whole. For all that we know, the theory of today may be similarly *aufgehoben* tomorrow.

The classification of contemporary human races presents in temporal cross-section a picture of the evolution of humanity. The classification of the sciences presents in a like cross-section a picture of the evolution of human judgment. Of this evolution, we repeat, the pragmatist theory of truth has taken insufficient account.

Nothing is more dangerously misleading than an indiscriminate induction from the various stages of a given development. That most, if not all, laws are approximate, that their validity is relative to the satisfaction of the particular wants of individual men, and *hence* that validity is determined by maximal individual satisfaction, is true enough to be exceedingly false. It is like Hume's theory—founded upon a similar sweeping induction—that justice is whatever custom makes it. Whereas, for example, Locke had claimed that taxation without representation is unjust, Hume observes: "What authority any moral reasoning can have, which leads into opinions so wide of the general practice of mankind in every place but this single kingdom, it is easy to determine."¹ Hume's induction was correct. He might even have added that in Great Britain the suffrage was strangely limited. And yet Locke was more than half right, because the norm which he described lay athwart the course of social evolu-

¹Essay XXXIV.

tion. So, when the pragmatist interprets his doctrine as an individualism, we declare that we find the rationalist right as against him; for the latter merely describes as a realized, or definitely realizable, end an indefinitely distant ideal toward which the developing judgment tends.

Will it be said that the development which we have been tracing is not of truth, but of the capacity of the judgment for expressing truth, that truth itself is the eternal ideal toward which the whole development is tending? Well and good; we need not quarrel about terms. But, in the first place, let it be remembered, that the stages of this development are not past and gone. We cannot live by pure mathematics alone, enormously valuable as its conceptions are to us. Truths such as, "Johnny is a baby," and "William is still young," are still wonderfully important to us; and it is idle to say that they are not true. Whatever truth may mean for an absolute consciousness, for us it certainly includes all the grades that have been mentioned, and no doubt others which we have not distinguished. It is an utterly arbitrary use of terms to restrict it to the ultimate ideal. In the second place, we must beware of imagining that science as a whole is approaching the mathematical type—that the day is nearing, though still far distant, when all our encyclopedias shall be reduced to tables of formulæ. Take any particular field of concrete inquiry, and as investigation proceeds, a body of more and more general and precise propositions is accumulated within it. But even within the given field the looser, more vaguely limited propositions likewise accumulate. The evolution is a spreading-out and a filling-in, as well as a growth upward. The same is true of knowledge in general. Paradoxical as the statement may seem, each new stage in the advancement of science makes it more and more manifestly impossible that its highest type of judgment should ever be applied to express its entire content. There is a manifest increase in clearness and universality, but there is also a constant expansion of the confused and the contingent; and the importance of these in our world-view is assuredly not declining.

CHAPTER III

THE DEVELOPING CONCEPT AND ITS FUNCTIONS

I. THE CONCEPT OF THE OBJECT

It has been pointed out that pragmatists, explicitly or by implication, have recognized two aspects of meaning; on the one hand, the reference to conduct, the *value* of the idea, or what we have called its *import*; and, on the other hand, its *content*, consisting of its relations to certain other ideas and represented roughly by the terms *genus* and *differentia*. But, while they have done so much, they have not concerned themselves to bring out the very intimate relationship which the two aspects bear to each other. Had pragmatist writers faced this problem, they might have averted much of the criticism urged against them, and at the same time have opened the way to a very fruitful development of their theory.

That a very intimate relationship exists will readily appear upon consideration of a very simple case of the learning-process. We are fully aware that there is a certain danger in this procedure—the same danger that is always incurred in the attempt to explain later and more complex features of an organism through reference to a simple and primitive type. On the one hand, there is the tendency to interpret the later type in terms far too simple to do it justice; and, on the other hand, there is the tendency, equally strong, to falsify the earlier type by reading into it characteristics which properly belong only to later stages of development. And yet these tendencies are not, we believe, so unavoidable, that we should forego the great advantage to be gained from the schematic clearness that is thus made possible.

Let us assume as the starting point of the process that an accustomed stimulus *A* is regularly met by the response *B* with satisfactory consequences. We assume the conscious experience

of A , and the learning-process which we have to study consists of the development of this A into two distinct forms, A' and A'' . (With the origin of consciousness we have no present concern, any more than the student of cellular differentiation is concerned with the origin of the first cells.) Upon certain occasions, let us say, the usual response B brings an unpleasant result. Subsequent behavior on meeting with the stimulus is thereupon modified until a satisfactory mode of response is hit upon; and at the same time attention is directed to the stimulus previously experienced as A . As a result of a successful modification of the earlier behavior, we now find that the original vaguely sensed stimulus A has become differentiated into the more attentively perceived A' and A'' , each demanding its own peculiar response, B' and B respectively.

Until the modified behavior has become habitual, and while, therefore, consciousness is still actively functional, there is, on the appearance of the stimulus A' (for example), a conscious association of it with the kinæsthetic and organic sensations that accompany its response B' , and perhaps with the revived image of the immediate consequences of this response. When this association disintegrates, the stimulus tends to pass outside the field of attention and later to drop out of consciousness altogether. In other words, A' , in so far as it is attentively recognized, *means* B' or the remembered consequences of B' .

But there is another side to the meaning, which ought not to be overlooked. When, at the outset of the learning-process, the response B results at various times unpleasantly, it is not to be supposed that it is only on the occurrence of such stimuli as will later elicit the different response B' that an inhibitory tendency will assert itself. Every A is still followed by B , for the lesson is not learned from a single experience; and in every case a slight weakening of the impulse may occur. And even if some comparatively striking feature of the A that was wrongly dealt with becomes quickly associated with the shrinking movements that attend the unpleasantness, so that only A 's with this feature

give rise to a weakened impulse, yet the feature in question may well enough be entirely disconnected with the peculiar experience, and the incipient differentiation of *A* that thus arises may count for nothing in the ultimate result. Speaking generally, then, we may say that the effect of an unsuccessful *B* is to weaken the impulse to *B* whenever *A* occurs. Now in numbers of cases the weakened impulse is immediately reinforced by success; in others it is further sapped by failure; and the two effects may for some time cancel each other without other manifest issue than the heightening of attention.

What is necessary for the learning-process is a reorganization of the sense-experience *A* in the two classes of cases; not that new elements should be brought to consciousness, but that the old should be given a new emphasis, so that feeling and active response may attach to the really important marks. The trial-and-error is not simply a selection between movements, but a selection between candidates for the focus. In the latter aspect, as in the former, we have no reason to suppose anything more recondite than a process of summation. A comparatively obscure feature, which when responded to by *B* is repeatedly and without exception succeeded by unpleasant after effects, and when responded to by the modified *B'* as invariably leads to pleasant after effects, must finally make its way to the center of attention; while the various false cues, leading to conflicting results, retire into the background.

Now where the recognition of *A'* (for example) is attended with distinct effort—and even when this is no longer generally the case it may still occasionally happen—this recognition is its discrimination from a possible *A''*, as the movements of hesitation suffice to indicate. Thus *A'* and *A''* sustain a quasi-logical relation to each other, as well as to the vaguer image *A'-or-A''* of which they are alternative fillings-in. The significance of each is partly that it is *not* the other. The first impression may be, for example, of a moving something to be attacked *or* to be avoided; and the aroused attention then amplifies the image so

as to characterize it as prey or enemy. The essential point to be noted is that, as new ideas arise by differentiation from old ones, they preserve this species of relation to each other; and further that the maintenance of this relation may often be essential to their serviceableness in their natural function of the guidance of conduct.

It is these quasi-logical relations to which we have attached the term *content*. Too much should not be read into it. The type of learning-process with which we are dealing is antecedent to the rise of thought proper. Such ideation as is present is non-conceptual, there being as yet no appearance of the distinction between individual and universal, or even the perception of things as permanent objects—to say nothing of abstract qualities and relations. And yet it must not be forgotten that the type of experience which does exist is the matrix from which universal and individual develop, and that we should expect to find in it the mingled characteristics of both.

It is clear that in their origin import and content are inseparably connected. It is the necessity for a differentiation of the response that gives rise to the differentiation of the stimulus. The former cannot occur without the latter, and the latter would not occur without the former. Thus the peculiar import which the consciousness of a stimulus possesses—whether analyzable into k'næsthetic and organic sensations or into memory-images—is intimately connected with the attentive discrimination of the stimulus in situations where its identity is doubtful.

One of the chief weaknesses of pragmatism has undoubtedly been the loose fashion in which it has treated, under the general name of 'idea,' all forms of cognitive experience from the pre-logical sense-images of animals and early childhood to the abstract conceptions of science. What pragmatist writers have mostly been concerned to point out, is the reference of all ideas to conduct. Since this was their distinctively new doctrine, the emphasis upon it has undoubtedly been proper enough in the

past. Nevertheless the failure to discriminate and describe the various ways in which the different types of cognitive experience function in the control of conduct, has certainly become a serious defect in their general theory. It would seem, for example, a matter of considerable importance to the successful development of pragmatism, that some systematic account should be given of the distinctive character of general ideas on the one hand, and of particular ideas on the other hand, together with their genetic relationship; or, again, that a similar account be given of the genetic relationship of the perception of objects to simple sense-experience. Yet, so far as we are aware, no such account has been attempted. Thus, according to Professor James's *Pragmatism*, the meaning of any idea consists in the particular differences in conduct which it involves. Any difference in meaning between one idea and another, accordingly, is wholly resolvable into the difference between the "cash-values" of the two ideas. Professor James's treatment is of course intended to be merely general; and yet not only does it take no account of any possible specific differences between different kinds of ideas, but it is hard to see how any difference of kind could be made out on the terms provided.

A treatment of the nature of meaning would seem to demand the consideration of two problems of primary importance: first, the distinctive characteristics of the *concept of an object*, both on the side of content and on that of import; and, second, the distinctive characteristics of the *general concept*. The first of these problems is indeed touched upon by Professor James. In the passage already quoted, in which he sums up the "principle of Peirce," he writes: "To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a practical kind the object may involve—what sensations we are to expect from it, and what reactions we must prepare. Our conception of these effects, whether immediate or remote, is then for us the whole of our conception of the object, so far as that conception has positive significance at all" (pp. 46-47).

In opposition to this statement we would assert that no object ever can mean any particular sensations or any particular reactions. What particular sensations and what particular reactions constitute, for example, our conception of the winter overcoat of daily wear? It has, to be sure, a certain familiar and recognized aspect when we see it hanging in the hall; but its identity is perhaps never a simple identity of visual sensations. Never twice on such occasions, in all probability, have we received the same visual sensations from it. Other sensations, which we might be supposed to expect from it are, it need scarcely be added, equally uncertain. The case is similar as regards our reactions toward it. It is true, we usually put it on in the morning; but if, when we try to button it up, we find a button missing, we may take it off and wear another for the day. Again, we may turn the collar up if it is snowing, or if we have a sore throat; but we may unbutton it when the day is mild, or if we wish to pay our car-fare. All these reactions the coat may involve in winter, while it is an object of daily wear. But what conduct does it demand on the return of spring? Packing away in moth-balls? Giving it to the Salvation Army? In short, the object as such is only a *conditional* determinant of any specific reaction, just as it is only a *conditional* determinant of any specific sensations. And it is the nature of the conditions under which an object may determine sensation on the one hand, and reaction on the other—that is, its relations to other objects—which constitutes in a large measure our conception of it. What does determine conduct in any case is the *total situation*. The relation of the object to the situation is that of a factor recognized as a possible factor in other situations.

In order to gain a better understanding of the functional significance of the concept of an object, it may be profitable to inquire into its probable origin in a more primitive type of experience. Under what general conditions may we suppose such a concept to have been derived from the type of experience which we considered in the preceding analysis of a simple learning-

process? Such a process results, as has been shown, in the forming of a distinction between two stimuli formerly undistinguished and reacted to in the same way. Now the fact that the two stimuli have come to be recognized as different, may not at all imply any analysis of either stimulus. The difference between them may be felt simply as a difference on the whole. But such a type of consciousness can have but a limited sphere of usefulness. If the animal can profit by more complex and varied behavior, then a more developed type of cognitive control is of evident advantage. Thus if the food of the animal be a living creature, which can safely be attacked in some situations, but which it is better to avoid in other situations, it is of importance that the situation be differentiated into prey and significant circumstances. Still more necessary is it that the prey be discriminated as distinct from its surroundings, if the most advantageous mode of attack varies with change of situation. But until a stage is reached where it is of decided advantage to behave differently toward prey under different circumstances, there is no reason why the prey should itself be recognized as a distinct object. It becomes an object for the consciousness of the animal, only in so far as it is discriminated as an element in a total complex situation. From the standpoint of biological utility, it is clear that *the object, so far from meaning a definite type of behavior, is recognized as an object only as it is associated with important diversity of behavior in characteristically different situations.*

The emergence of the object marks a critical stage in the development of conscious life. Its importance lies fundamentally in the *indirectness* which the cognitive control of conduct now assumes. Broadly speaking, it is the indirectness of the reference of cognitive experience to conduct, that, on the one hand, makes it so efficient an instrument of control, and, on the other hand, gives thought its distinctive character. Regarded from this standpoint, the whole development of conscious life may be characterized as an increasing *indirectness* in the control of conduct. More specifically, the emergence of the object means the

emergence of a set of constant elements into which new situations may be resolved. Instead of experience falling into a succession of stimuli related to each other as simply alike on the whole and different on the whole, it now falls into a succession of complex presentations, containing constant factors in new and varying combinations. The identity of these factors gives a continuity to experience which was impossible before. As a result of this, the learning-process becomes a far more efficient means of adaptation. The discovery of the proper response to a new situation need no longer be a matter of sheer chance. The new situation, if it contain familiar objects, tends to stimulate not simply one habitual response but the whole group of conditional responses which the object represents. Thus if one response fails, an alternative is ready. Foresight is immeasurably extended. In proportion as the concept of the object gains in variety of associations, the individual becomes correspondingly fertile of resources in the face of new conditions.

So much for the significance of the concept of the object in reference to conduct—its value, or, as we have termed it, its import. The increase in complexity, the indirectness of the reference to conduct, which we have pointed out, is correlative to a corresponding development on the side of content. The content is made up, on the one hand, of distinctions between the object and the situation and of its quasi-logical connections with other objects from which it must be discriminated. As in the case of the simpler sense-impression, these connections include the differences between the given object and other objects, together with the more general likeness equally recognized as subsisting between them; for objects, like simple sense-impressions, come to be discriminated as possessing differences only in so far as there is a tendency to confuse them under certain conditions. This confusion may arise simply from a lack of sufficient attention; or it may be that two objects remain indistinguishable under some conditions, and that a change of condition is necessary to enable their differences to become discernible. On the other

hand, the distinctions thus constitutive of the content are correlative with the second aspect of the content—namely, the recognized identity of the object with itself in different situations. In the earlier form of cognitive experience, the identity of the stimulus is a simple given identity of sense-qualities within which no differences subsist. But the identity of the object is the identity of a *system*. It is constituted by the whole group of possible sense-impressions, associated with the conditions of their appearance. Thus, for example, a single sense-impression may not be sufficient to establish the identity of the thing perceived. The given impression may be precisely that which the supposed object would yield under the given conditions; but it cannot be truly identified as the object, unless under changed conditions it continues to yield such impressions as are to be expected from that object upon similar changes.

We are now ready to call attention to a further distinction. The group of associations which constitutes the concept may never in its entirety be present to consciousness in any single experience. In fact, it is only a concept of very low type that would ever be wholly present. The concept is not to be identified with any conscious process, however complex. It is an organization of possible processes, which is *represented* in consciousness by some member or members of the system or by some symbol associated therewith. Such representative processes are of two kinds: percepts and ideas. The system itself is the object-as-conceived, to which the representative process refers, and to which it must conform if it is satisfactorily to perform its cognitive function.¹ Or, again, in another sense of the term, the system is the *meaning* of the representative percept or idea.

How, to take first the case of perception, the representation of the system is psychologically accomplished by the actual perceptive process, is a problem which has not been fully solved.

¹Of course, conformity to the object-as-conceived is not sufficient to ensure successful conduct. For the object may not be adequately conceived. It may be that future experiences, in revealing hitherto unknown possibilities of the object will demand a modification of the conceptual system.

How, indeed, can given conscious contents 'represent' or 'mean' or 'point to' other possible contents not given? Where the habitual associations which make up the concept are very few and simple, representation may, perhaps, be effected by the revival of images of the associated experiences; but where the associations of the given sense-presentation are numerous and complex, the percept certainly does not contain the revived images of all the possible associated experiences. Yet some structural peculiarity of the given content is, no doubt, to be looked for, to account for the representative function. When the perception involves an appreciable degree of attention—which is, of course, the favorable condition for revival—there would undoubtedly be a successful tendency in certain of the associated experiences to rise to clear consciousness, while a weaker tendency on the part of others would be inhibited. We would suggest, however, that such inhibited tendencies to revival may affect in a distinctive manner the qualitative tone of the existing content. The arousal of attention regularly goes along with some uncertainty; it means the problematic character of the presentation attended to. And this problematic character may well involve a conflict among the various associations. There develops, it is true, a capacity for perception without any appreciable degree of attention. Thus the familiar objects of daily life are *given* presentations, from which all meaning, all conscious reference, seems to have worn away.¹ Nevertheless, it would, we believe, be committing a serious mistake to regard such perceptual experiences as merely given presentations wholly devoid of reference. Far better does it seem to regard their meaning or reference as potential, represented by nascent tendencies of association with a whole group

¹It is this characteristic type of experience which the pragmatist is so concerned to distinguish from the 'knowing,' or 'cognitive,' experience proper. It is just the failure to make this distinction, so Professor Dewey claims, and the attempt to treat all experience as exclusively cognitive, that is the source of the futile intellectualism of present-day philosophy. With this contention we feel a certain sympathy. But we believe that the differences between the 'knowing' experience and other forms of experience have been greatly exaggerated, and that a serious limitation has thus been put upon the development of pragmatist theory.

of experiences. These nascent associations, which remain nascent unless called out by attention, would seem to be a constitutive characteristic of the percept, giving it its distinctive qualitative tone. All this may be expressed by the statement, that existence and meaning are correlative aspects of perceptual experience; that in inattentive perception the meaning tends to drop away, though this separation is perhaps never complete, mere existential givenness being then a limit which is not reached in any actual experience.

No less important than the distinction between the concept and the percept, is the corresponding distinction between the concept and its second kind of representative, the *idea*. Just as in perception all the members of the group of possible associations are not present to consciousness, so they are never, except perhaps at an early stage of cognitive development, all present in the idea. Here again we meet a problem which has not been fully solved—the psychological structure of the idea. In general it may be said that as compared with the percept its representative character is far more essential to it. The elements, which on any particular occasion stand as the nucleus around which the associations cluster, are far less prominent. It is certainly misleading to suppose the idea to be a revival of a particular percept, in which reappear the same sensation-qualities which figure so prominently in perception. We may, indeed, have ideas approaching this type—some of us have many such. But they certainly appear but seldom in our trains of reflective thought. Most of our ideas are schemata. The nucleus about which associations cluster may be the faintest image of a word, or other symbol, perhaps peculiar to the individual.¹ Here perhaps to a greater degree than in attentive perception there is conflict between alternatively possible tendencies to revival. The nascent associations are, so to speak, in a state of irritability. Many

¹We are of course here speaking of the highest type of cognitive experience, and not of a stage prior to the development of universal concepts. The appearance of language marks a nodal point in mental evolution which involves important modifications of both perceptual and ideational processes.

remain inhibited, while others rise to clear consciousness; the selections being determined on the one hand by habit, and on the other hand by the total situation and the nature of the existing interest.

But whatever the psychological character of the representative idea may be, the essential point upon which we must insist is the distinction between the idea, *i. e.*, the particular conscious process, and the concept, or the system of possible processes which the idea represents. The former may vary widely from situation to situation, while the concept of the object is unchanged. And the variation of the idea may affect not simply the association nucleus, but, more importantly, the particular associations that spring up.

EXCURSUS UPON J. S. MILL'S THEORY OF OBJECTIVITY

The kinship which certain leaders of the pragmatist movement have claimed with the school of English empiricism has nowhere been so expressly avowed as in their relation to the last great name of the school—John Stuart Mill. It is not difficult to understand why this should be the case. It was Mill who carried to the farthest extent the psychological analysis of fundamental philosophical concepts begun so brilliantly by Berkeley. And in Mill's hands the subjective idealism of his predecessors underwent a remarkable transformation, which is very generally supposed to have issued in something more nearly approaching realism than a consistent idealism. These supposed realistic tendencies of Mill might the more readily be regarded as akin to pragmatism, in that it is precisely the idealistic side of English empiricism that pragmatists are so concerned to disclaim, believing, as they unanimously do, that a new realism is the logical outcome of their pragmatism. And yet the remarkable fact is that Mill's transformation of subjective idealism has received as scant attention from them as it has from thinkers generally and, as we believe, as great misappreciation. As we shall try to show, it is precisely Mill's transformation of the idealism of Berkeley

and Hume, that constitutes his greatest contribution to philosophical thought, and from which pragmatism especially has most to learn.

Misappreciation of Mill has not been confined to this side of his thought. His treatment of utilitarianism met much the same fate, and for a similar reason, namely, his own conservative attitude toward his philosophical innovations. Thus, in his treatment of utilitarianism, he advanced, as if it were nothing more than an unimportant modification of the prevailing hedonism, the theory that desire, and not pleasure, is the determinant of value—a theory which really involved, as is now recognized, a profound transformation of the older utilitarianism. Owing very largely to the modest and conservative mode of presentation, this new theory was criticized, on the one hand, as being open to all the objections applicable to the traditional hedonistic doctrine, and, on the other hand, as betraying a misunderstanding of the older doctrine and inadvertently going over to the camp of the enemy. In the same fashion, his doctrine of objectivity is advanced as if it involved only a slight amendment of the subjective idealism of Berkeley and Hume. And here too he has been accused of misinterpreting the theory he avows and inadvertently throwing wide the door to the admission of a thing-in-itself in but a slight disguise.

In view of the prevalence of such misconceptions of Mill's position, we shall take the liberty of presenting on our own account what we conceive to be his essential contribution to the theory of objectivity, together with our own reflections upon the actual deficiencies of his treatment and upon the manner in which pragmatism is able both to remedy these defects and greatly to improve its own position.

Mill's general problem is essentially that of Berkeley; namely, the explanation of the existence of sensible things in psychological terms. Berkeley's solution had been, as it will be remembered, that sensible things are a *class* of ideas, or perceptions (synonymous terms for him), and that accordingly their existence can mean

nothing more than the fact of their perception by the mind. The ascription of existence to an object not at the moment perceived is explained by Berkeley, somewhat uncertainly, as meaning either its presence in the form of a memory-image of past sensations, or its presence to other minds, or, lastly, its conditional presence under other conceivable circumstances. Mill, while expressly avowing himself to be a Berkeleyan, and accepting the fundamental Berkeleyan presuppositions, nevertheless recognized the serious defect of this theory of objectivity. He recognized that even from the psychological standpoint it is essential to give some explanation for the universally accepted distinction between the object and the mere perception or idea of the object, even if the distinction is not to be justified as an ontological difference between two orders of existence. In addition to the fact of the universal acceptance of this distinction by common sense, the particular consideration that led Mill to take this position was as follows. The uniformity of nature is not, as Berkeley had expressly asserted it to be, a uniformity in the order of sensations. No law of nature can be stated in terms of sensations as such, or of perceptions as such. It cannot be said, for example, that if we see a vivid flash of light we shall hear a heavy rumbling noise. In the great majority of such cases, there are an indefinite number of alternative possibilities of experience. Whether we hear the thunder or not, depends upon the fulfilling of further, *objective* conditions, not definable directly in terms of perception. The uniformities of nature, in other words, are *conditional* uniformities of a higher order, and must be stated in terms of more or less highly abstract conditions of experience—that is, in terms of *things*. Thus it is these conditions of perception, and not the perceptions themselves, that are the objects of science, and to which scientific laws apply.

The following sharply contrasting passages will suffice to show Mill's divergence from Berkeley in this matter. Berkeley writes: "The ideas of Sense . . . have likewise a steadiness, order, and coherence, and are not excited at random, as those which are

the effects of human wills often are, but in a regular train or series, the admirable connection whereof sufficiently testifies the wisdom and benevolence of its Author. Now the set rules or established methods wherein the Mind we depend on excites in us the ideas of sense, are called the *laws of nature*; and these we learn by experience, which teaches us that such and such ideas are attended with such and such other ideas, in the ordinary course of things."¹ Mill, discussing the same subject, writes: "Now, of what nature is this fixed order among our sensations? It is a constancy of antecedence and sequence. But the constant antecedence and sequence do not generally exist between one actual sensation and another. Very few such sequences are presented to us by experience. In almost all the constant sequences which occur in Nature, the antecedence and sequence do not obtain between sensations, but between the groups we have been speaking about, of which a very small portion is actual sensation, the greater part being permanent possibilities of sensation, evidenced to us by a small and variable number of sensations actually present."²

The solution which Mill has to offer to this important problem, so underestimated by Berkeley—his psychological theory of the nature of objectivity—is anticipated in the passage just quoted. This theory is, in brief, that external things are not to be identified as a class of complex ideas; but that they are groups of possible, as opposed to actual, sensations. Just what Mill meant by the famous phrase, "permanent possibilities of sensation," it is essential to be at some pains to discover. In the case of direct perception, the actual sensations form but a small part of the object as experienced. As Mill says: "What we see is a very minute fragment of what we think we see." In addition to the sensations actually present to consciousness, there are associated a whole group of other possible sensations, some of which a more careful attention would serve to make actual, others of which would enter the field of consciousness by a slight shift of bodily

¹*Principles of Human Knowledge*, § 30.

²*Examination of Sir William Hamilton's Philosophy*, 6th ed., Ch. XI, p. 230.

position, etc. The perceived object, that is to say, is determined to a greater extent by the associations which the given sensations have with other merely possible sensations, than it is by the actually given sensations themselves. And, in fact, the existing sensations enter into the perception of the given object, not through the mere fact of their actual presence in consciousness, but by reason of their association with the whole group of possible sensations which make up the object.

But directly perceived objects form but a small part, again, of the world of objects which we believe at any moment to exist, and which we constantly think of as existing—the world which forms the persistent background of our immediately given experiences. If we analyze what we mean by the existence of an object not actually perceived, a precisely similar result is reached, namely, that it is nothing more than a group of possibilities of sensation under specific conditions. Indeed, whether the object is perceived or not, it is this group of definitely connected possibilities of sensation that constitutes its objectivity as over against the subjectivity of the transient and variable actual sensations. It is true that there would be no group of possible sensations—no object would exist—if it were not for the actual experiences of the past and of the present; and yet, it is the possibilities that are relatively permanent and unchanging, while the actual sensations are fleeting and changeable.

Mill's theory is thus seen to make a great advance over that of Berkeley, in that the object is no longer itself a kind of idea. It is not, in other words, a *state of consciousness*. In relation to such states, the existence of the object may be described as ideal. But Mill is still a Berkeleyan in that the object is explained *in terms of* ideas, or, strictly speaking, of sensations. Its existence as something independent of conscious minds is as meaningless to him as it was to Berkeley. Moreover, the object, as compared with the elements of consciousness, is merely derivative; it is, in a sense, an artificial product. The fact that it is regarded by common sense as possessing a reality superior to

that of ideas, is an illusion to be explained psychologically; but such explanation in no wise constitutes a justification of such an interpretation.

Some of the causes to which Mill attributes the growth of this illusion, we have already mentioned. That is to say, experience, through the operation of the laws of association, once having given rise to the idea of groups of possibilities of sensation, these groups come to be thought of as permanent, and as persisting relatively unchanged while our actual experiences are constantly changing. They are naturally regarded, therefore, as, in a sense, independent of ourselves. In the second place, the groups of possible sensations are not realized by ourselves alone; but they are objects of common experience in a way in which the sensations themselves are not. Under the same conditions, others have experiences similar to ours. It is not so much that the sensations compared one to one are precisely similar, but that they exhibit the same uniformities of antecedence and sequence. It is then the groups of possibilities—the conditional certainties—that are constantly verified by our intercourse with others. Moreover, as we must not forget to recall, the object is given a place in its system independent of our subjective sensations and feelings, not simply because it is accessible to other men, but because to it the universal laws of nature apply. Finally, what serves to complete the emancipation of the object is the inevitable tendency to regard it as bearing a causal relation to our sensations. For the actual sensations we feel are indubitable evidence to our minds of the presence of some group of possibilities of sensation; and these possibilities are held to have been equally possibilities, whether the conditions of their realization in actual experience were fulfilled or not—that is, the object is regarded as necessarily existing prior to our perception of it, which is precisely the condition for the ascription of the causal relation.¹ There is but one

¹Mill's treatment involves likewise an important modification of Hume's theory of causality. For just as the uniformities of nature hold, not of the antecedence and sequence of sensations, but of the antecedence and sequence of possibilities of sensation, so the causal connection applies, not to the sensations in their relation to each other, but to *objects*.

step more needed to account for the belief in the existence of an external world as a realm of being wholly independent of experience—that is, for the rise of ontological dualism. This step is taken, when we recognize the tendency of the mind to generalize illegitimately by applying to a whole class of things what holds of each member of the class considered separately. Thus, because each group of possibilities possesses a certain independence with reference to the actual realization of any of the particular possibilities that constitute it, considered singly, the group comes to be regarded as absolutely independent of any actual experience whatever—an inference which is, of course, wholly unwarranted. The same thing may be otherwise expressed by saying that the ideal character of the object is forgotten, and it is accounted as possessing in itself a reality properly ascribable (according to Mill's presuppositions) only to the sensation as such.

Let us now pass to the consideration of the more common criticisms of Mill's position. First, there is the charge, that the theory logically commits Mill to a form of realism. One cannot stop, it is argued, with the statement, that the object is a *possibility* of sensation. There can be no such thing as a mere possibility, for every real possibility must have a basis in actuality. For the object to be a permanent possibility of sensation, it must exist as actual in some form. The phrase may be an adequate description of what the object is *known as*; but, if it is anything more than a mere idea, it must *exist* as something actual, even though the nature of that actuality be inscrutable to us. The dilemma is perfect. If the object has a permanent existence, it cannot be reduced to an idea, for all ideas are impermanent. If, on the other hand, it is a real possibility, it must exist as an actuality; but the only actualities that Mill admits are ideas.

That this criticism is based upon a misunderstanding of Mill's real position will, we believe, be evident upon consideration. It seems to rest upon a certain confusion in regard to the meaning of the term 'possibility.' This is a word that is commonly used

in various senses which are by no means always kept distinct. First, it is used to signify an incompleteness of knowledge about a particular event, as when it is said that a certain imagined future event is a possibility but not a certainty. This is equivalent to saying that so far as is known the event may or may not happen. This obviously is not the sense in which Mill employs the term, nor does the criticism with which we are concerned imply any such understanding of it. Secondly, the term is applied to what is regarded as the essential condition of the future existence of a thing. Thus the egg is, or contains, the possibility of the chick; that is, the existence of the egg, although not sufficient to determine the future existence of the chick, is nevertheless regarded as the essential condition of the chick's being. Hence, if one were to assert that the chick's existence is a real possibility, such an assertion must owe its truth to the *actual* existence of the egg—the possibility in other words, must exist as an actuality. Now it is this sense of the term 'possibility' which Mill's critic evidently has in mind, when he contends that the phrase, 'permanent possibility of sensation,' may express all that we know of the nature of the object, but that it must nevertheless exist as an unknown or even unknowable actuality. But is it in precisely this sense that Mill uses 'possibility'? Let us take the case of the object that is directly perceived, and ask what Mill conceives this present object to be. Obviously its present existence is not the actual sensations we are having; the object, even when directly perceived, is still the possibility of a group of sensations. Mill's statement, that the object is the possibility of sensation, is not analogous to the statement, that the egg is the possibility of the chick; for in the latter case the egg is an existent of the same order as the chick. In the former case, on the contrary, the object is not an existent of the same order as is the sensation—it is, as we remarked before, *ideal* with reference to the sensation, which is real. There is, indeed, an actuality which corresponds to the possibility of the group of sensations; namely, the present sense-experience, whatever it

may be, or perhaps the memory of certain past sensations. A world of mere possibilities, however complexly interconnected, would be a shadow. It is the givenness of the present or remembered sensation that communicates substance, first to the objects of present and past perception, and then to the whole universe in which they have their place. The theory is very similar to Kant's. "For everything is actual that hangs together with a sense-perception according to laws of the empiric progress. They [the men in the moon] are real, if they stand in an empirical connection with my actual consciousness, although they are not on that account actual by themselves, *i. e.*, apart from this progress of experience."¹

A second criticism frequently met with is one which seems to start from an interpretation similar to the one just urged by us in Mill's defense. Briefly stated, it is that Mill's admission of possibilities of sensation as something over and above the sensations themselves, logically commits him (although he fails to recognize the fact) to what is substantially Kantianism—that is, to the assumption of an *a priori* form of thought. But this criticism too seems, upon consideration, to be unjustified. There is, indeed, a striking resemblance—as we have illustrated above—between Mill's doctrine and that of Kant. But the differences are equally striking; for the forms of connection which Mill considers are not *a priori* but *a posteriori*. In the first place, they are not intuitively known and assured, as are Kant's *a priori* principles; but they are discovered empirically, and often, as in the case of objectivity, only by careful and difficult psychological analysis. Moreover, it can never be asserted that a given description of any form of connection is adequate or final. It is always open to correction and modification. In the second place, not only must the ascertainment of existing forms of connection be wholly empirical, but the forms themselves Mill conceives to have arisen and to be modified in the course of experience. In fact, it is only by tracing their psychological origin and de-

¹*Critique of Pure Reason; The Antinomy of Pure Reason*, Section 6.

velopment that their nature can be defined. A better illustration of Mill's theory than any which he himself gives may perhaps be found in the forms of musical composition—except that it may suggest too forcibly the social factor in psychological development, of which he took but little account. These forms have formerly been supposed to be *a priori* with respect to musical experience; universally valid for all mankind, and, while perhaps only gradually arising to self-consciousness in the individual, nevertheless operative in moulding his whole perception of melody and harmony from the outset. As thus conceived, they furnish a striking analogy to the Kantian forms of experience in general. It is now commonly admitted that musical forms are, both in the individual and in society, a product of evolution, and that this evolution is still in progress, although to the modern man they may appear to be as absolute as the law of gravitation. The musical forms are then typical of all the forms of experience which Mill admits. If it be asked, whether music has not an *a priori* basis in the sense of generic characteristics of tonal perception, by which the whole evolution of the forms has been conditioned, the disciple of Mill may well answer in the affirmative. But such characteristics of the perception are nothing more than empirically discovered psychological uniformities. And in precisely similar fashion he can admit no other basis for the forms of experience in general than psychological laws.

Our own criticism of Mill strikes deeper, as we think. It is the dogmatic presuppositions of his theory that we would call in question. His departure is from the simple elements of sensation and imagination, held together by various modes of 'external' association (which do not affect the character of the elements connected). To these he adds memory and expectation, which are 'real' connections, through which a present state of consciousness involves in itself a belief in the past or future existence of another state, with which the former is in some wise continuous. But he is so far from attempting to reconcile the existence of these 'real' connections with the simplicity and independence of

the conscious elements, that he sets them down as a final inexplicability.¹ Mill is not only a dogmatist; he is a dogmatist who clings to his faith despite what is to him its manifest insufficiency. It is not as if he simply accepted sensation and memory as equally fundamental facts. Sensation he accepts as a fact. Memory he accepts as an utterly incomprehensible fact.

Accordingly, for Mill the real is, first, the sensation, and, secondly, the remembered or expected sensation. From both of these must be distinguished the (not actually, but) conditionally expected sensation, that is to say, the possible sensation. The possible sensation is not, as such, real, though it may become real. But, while not real, it has, as merely possible, a permanence, which the real, as real, has not. Objects are groups of possible sensations, or possibilities of sensation; the terms are not carefully distinguished.

Objects are not real, though some elements of them may from time to time acquire and lose reality. If the popular, and even the scientific, consciousness regard the object as real, and even as more real than present sensations, that is a delusion which can be satisfactorily accounted for. The possibilities of sensation are relatively permanent; they exhibit extensive uniformities of succession; and they are cognizable by men in general. Hence their supposed reality.

Now suppose that, instead of regarding the sensation as a given element of reality, we treat it as a scientific construct, an hypothesis, by means of which the experienced reality is to be in some measure analyzed and explained—no more given, no more open to direct observation, than the atom. How would our attitude toward Mill's theory be affected? The question is not an idle one, as the position thus described is that commonly held by psychologists today. When we turn aside from dogmatic presuppositions, and ask ourselves how anything is ever perceived by us *as real*, it becomes obvious that nothing is ever so perceived except in implied connection with a not-perceived,

¹More precisely, memory is assumed as inexplicable, while expectation is supposed to be explicable in terms of memory.

within which connections are likewise supposed to exist. The present sensation is never identified by us with the real; or if for a moment we are tempted to make the identification we are forced, like the ancient atomist, to turn upon ourselves with the admission, that the not-real is just as real as the real. We must, then, radically reinterpret Mill's explanation of the general conviction, that the permanent possibilities of sensation are more real than the sensations we actually experience. What he regards as a psychological account of the sources of the conviction must be construed as a *partial logical analysis of the meaning of reality*, as implying on the one hand the series of given sensations, and on the other hand the connections between sensations, given or not given. That objects are relatively permanent, generally verifiable, and subject to universal laws, makes them 'more real' (*i. e.*, more concrete) than the momentarily given sensation-complex, just as truly as the givenness of the sensation-complex makes it more real than other merely possible complexes. If the object with its inexhaustible possibilities is ideal in comparison with the conscious presence of the perception, the perception is subjective in comparison with the permanence and universality of the object.

Whether or not Mill is right in holding that the phenomenon of memory cannot be explained in terms of association, we do not stop to inquire. Our thesis is the more general one, that 'real connections' are as essential to the realities of experience as are the elements connected. Possible sensations are merely possible, to be sure. But *possibilities of sensation*, in the sense of more or less permanent connections of antecedence and consequence, in which the series of our actual sensations has its place, are not merely possible but real—or, if they be not real, our experience is a dream within a dream.

If our criticism is well-founded, Mill, in his theory of permanent possibilities of sensation has accomplished far more than he dreamed of attempting. His refutation of Berkeley appears to us to be definitive. But, more than that, he has given to empiri-

cism the means of an effective synthesis of realism and subjective idealism, in which the claims and the limitations of both are duly recognized.

What has all this to do with pragmatism? In the first place, it is to be observed that the pragmatist theory of the relation of thought to conduct casts a wholly new light upon Mill's analysis of objectivity. Permanence, uniformity, accessibility—the factors may seem at first blush to have nothing in common and to form a merely accidental combination. But for the intelligent guidance of conduct what can be more necessary than an environment thus characterized? It is the condition, not simply of success, but of reasonable endeavor. In so far as the world is *not* of this character, our struggles are vain.

In the second place, Mill's theory offers an alternative to the *immediatism*,¹ with which pragmatism has hitherto been bound up. It is to be noted that pragmatism, as presented by its chief advocates, is subject to a limitation which the evidences drawn from functional psychology seem hardly to warrant—namely, its inapplicability to perception. According to these writers, the percept is neither true nor false: it is a *fact*. It *represents* nothing beyond itself, with which it might stand in agreement or disagreement. Ideas, on the contrary, are representatives. The idea of a sensible thing may, for example, be a copy of the thing. But the percept (*i. e.*, the thing as perceived) *is* the thing. In this identity, there is no scope for representation, whether true or false. A thing cannot agree with itself.

This view is included in the theory of immediatism, the general discussion of which we cannot undertake here. At the same time it stands in a very close relation to the loosely-styled subjective idealism of David Hume. Hume, it will be remembered, found that the belief in the *continued existence of our impressions of sensation* was instinctive and ineradicable, and was an indispensable postulate of science; while at the same time he con-

¹Cf. Appendix I, pp. 231 ff. and Appendix II.

demned the belief as wholly irrational. The pragmatists have affirmed a sort of converse of this—or perhaps we should rather say, the same doctrine expressed in objective instead of subjective terms—with the sceptical afterthoughts omitted. If the percept and the object are identical, what difference is there between saying that the percept (*i. e.*, the impression of sensation) exists while it is not perceived, and saying that the object is directly present in the perceptive consciousness. In a former chapter we mentioned one inconvenience of Hume's theory, which attaches with equal force to the pragmatist restatement: namely, that a supposedly unchanged object must be successively identified with very different percepts. In the preceding pages we have given an account of the difficulties raised by John Stuart Mill—difficulties which seem to us to be wholly fatal to the theory. Here we wish to point out that the percept may be quite as truly representative as the idea, and representative in substantially the same fashion.

Just a word as to resemblance. It is true that an idea may resemble a certain percept, but only as one percept may resemble another—as the aria heard in the gallery resembles the aria heard in the front rows of the pit, or as the landscape at dusk resembles the landscape at midday. Moreover, upon the score of resemblance, an idea is no more open to qualification as false or true than a percept; for, if the idea may (by later reflection) be subjected to comparison with the percept, so also may the percept be subjected to comparison with a percept (or idea) regarded as a yet better standard.

We say that if the pragmatist theory of meaning applies to the idea, it must equally apply to the percept. *A fortiori* it must. For on the lower levels of animal life the conscious control of conduct must be almost entirely vested in the sense-impressions of the moment, imagination reaching no farther forward than to the immediate consequences of the act to be performed. And when, with the progress of intelligence, the control exerted by perception is more and more largely supplemented by centrally

aroused processes, no new mode of exerting it is introduced. It is true that in the guidance of overt conduct the percept remains (except, perhaps, in abnormal cases) an essential factor. Control by 'mere ideas' is lunacy. It is true also, that the percept makes, in general, a more forcible appeal to the emotions than does the idea. The sight of the proffered coin is a powerful inducement to the hesitating vendor. But these admissions do not touch the heart of the matter. As from the structural standpoint there is no fundamental difference between percept and idea—simply a difference in the proportion of externally and centrally excited elements—so from the functional standpoint there is no fundamental difference in the *mode of control* which they exercise upon conduct.

Is it possible that the disagreement here indicated is merely verbal? We think not. Mr. James has described the "kind of knowledge called perception" as one in which the knower and the known are "the self-same piece of experience taken twice over in different contexts."¹ True, perception does not mean for him necessarily the perception of things *as* things, *i. e.*, as having an existence beyond the moment of their presence in consciousness. This is a piece of interpretation for which a somewhat extensive previous experience is necessary. But, if we understand Mr. James aright, this interpretation is not supposed to alter the nature of the percept as such. The child's earliest perception *was* (presumably) a perception of things—that is to say, the percepts *had* an existence beyond the moment of perception—though the perceiver did not know it. This position (which is substantially the same as Hume's) we believe to be clearly false and to have been sufficiently refuted by J. S. Mill. But we further hold that, even if this position were correct, nevertheless the percepts have meaning substantially as ideas have, and are similarly open to criticism as correct or incorrect. This would involve the paradoxical conclusion, that things are correct or incorrect—but we are not responsible for that.

¹*The Meaning of Truth*, p. 103.

CHAPTER IV

THE DEVELOPING CONCEPT AND ITS FUNCTIONS

II. THE GENERAL CONCEPT

So far we have not concerned ourselves directly with that level of cognitive experience at which the concept of the simple object has been differentiated into the universal concept, denoting any member of a class, and the individual concept, denoting a particular member of the class; although in what has preceded we have had occasion to refer to such a type of experience. The earliest objects, like the earliest sense-images, are, of course, neither universal nor particular, but possess certain characteristics of both types. The fully developed universal is no doubt a product of a very late stage of development, as is also the fully developed individual. In advance, however, of a complete differentiation of the two, objects must have fallen into groups, more or less indeterminate, to be sure, but within which quasi-logical relations became established which bore certain analogies to the later logical relation between class and individual member.

This may be illustrated by the behavior of young children. Very early there appears an instinctive recognition of other children. The sight of another child elicits signs of interest and delight, which the appearance of adults or other animals does not call forth. Such behavior is, of course, instinctive, and indicates no more than that some distinction is made between the appearance of a child and that of an adult or animal. Moreover, no distinction is at first made between one child and another—any child calls forth the response. The child it sees on the street while out in its go-cart meets the same response that is given to the neighbor's child who is a constant visitor, or even to its own reflection in the mirror. But very soon, if the child is thrown with other children, distinctions between individuals are

noticeable in its behavior, and we have the beginnings of classification. The child at such a stage recognizes a certain resemblance between all children, which it does not recognize between children and adults; for, in spite of the differences in its behavior toward individual children, its attitude toward any child is characteristically different from its attitude toward adults. Furthermore, the recognition of this general resemblance develops *pari passu* with the recognition of individual differences. There is no grouping of children together until particular children come to be distinguished. But that there is a grouping, which is correlative to the growth of individual distinctions, seems evident.

As general conditions for the formation of the earliest class concepts, we find, first, a failure to distinguish between a number of objects, which are, however, distinguished from other objects; second, the emergence of a distinction between one or more of the objects in question and others of the number, which is valuable for certain purposes or in certain situations, while it still remains of advantage to the individual to treat them similarly except under these specific conditions. The mere failure to distinguish between them must, that is, be transformed into a positive recognition of their general resemblance, such recognition being essential to their classification. These fundamental conditions being fulfilled, the further development of the incipient class concepts depends upon the conscious differentiation and accentuation of this common character, effected by the focusing of attention upon it.

We are now ready to inquire what relation the general concept bears to the more primitive concept of the simple object. In the first place, like the latter it is an organization of associations, actual or potential, and not a particular process. In other words we have here to draw the same distinction between the general concept and its psychological representative, the idea, that we found necessary in the case of the simple object. If, however, we compare the organization constituting the general concept with that which constitutes the concept of the simple object,

we find a characteristic difference. The concept of the simple object is an organization of various conditional possibilities of experience which have become associated by virtue of their direct functional relation to each other. In the general concept, however, we find an altered state of affairs. While the members of this organization exhibit, indeed, a type of internal relationship similar to that subsisting in the concept of the simple object, a modification of structure has taken place under the operation of what has traditionally been called 'association by similarity.'¹ The system is based, not simply upon the direct functional relation of the associated experiences to each other, but upon the common significance for conduct of a variety of objects. What may be called potential resemblances between objects become actual, and general concepts of them are formed, only when some interest attaches to the recognition of these resemblances and attention is directed toward them.

If these observations are correct, it would follow that the earliest general concepts must be based, not upon specific and definite similarities between objects, but upon relatively massive and indefinite resemblances, such as would correspond to the common significance for conduct of the objects associated. And this is what seems to be the case with the general concepts of children, as evidenced, for example, by their early attempts at definition. Thus a child of three, when asked: "What is a train?" replied: "A train is something to pull." Similarly, "A toy is to play with," and, "A mamma is a lady to take care of me." Students of pedagogy have compiled sets of definitions given by children, which are similar in character. In these instances the resemblances between the different objects belonging to the class

¹This psychological mechanism has, from the time of its first mention by Plato, been regarded as separate and distinct from the so-called 'association by contiguity'; and only in very recent times has the fundamental identity of the two modes of connection become probable. It must be admitted that to the psychologist of today 'association by similarity' is rather a name for a problem than a solution. But however problematic the detailed analysis of this mode of association may be, it has become evident that it belongs only to the most highly evolved types of consciousness and is probably attributable only to man himself.

are markedly indirect. Thus the child will class as a 'train' its toy train of iron, a piece of wood with a string tied to it, a row of blocks, etc. As regards 'toy,' the resemblances are even more indirect, and consist rather in similarities of attitude than in likenesses between the objects considered by themselves.¹ Nevertheless, if the concept be not merely artificial, but is a real functional element in the child's mental economy, it must have content as well as import—the different toys must have some common characteristics by which they may be discriminated from other objects. Thus, for example, toys are also things papa buys in a certain well-known store, they are things given it on festive occasions, things kept in the chest over which it has comparative freedom of control; they are distinctly not things mamma buys in the grocery store, or things kept on the mantle-piece or the desk, however attractive these might be to play with.

So much for the mode of association by which the elements constituting the class concept are related. As compared with the concept of the simple object, it is also to be noted that in the general concept the relations to other concepts are far more definite and constitute a far more prominent element in the structure of the organization. Indeed, as the class and individual concepts become clearly differentiated, such relations pass from a quasi-logical to a logical form. The presence of such true logical relationships is clearly evident where a relatively simple class concept has undergone a further differentiation and has developed into a more general class on the one hand and a subordinate, relatively specific class on the other. We have such a case of differentiation, where the child's earlier concept 'mamma'

¹If some early concepts are based upon directly observable sense-differences, these are found upon examination to be no exception to the general rule. 'Big' and 'little,' 'hot' and 'cold' have an import for the child, which the color-tones (for example) ordinarily have not. It is not mere sensible discriminability, however gross, that calls for class distinctions. The common failure among primitive peoples to have special terms for blue and green is not the slightest indication of an undeveloped color-sense. Children, too, are usually very slow in noting differences between colors; but in the kindergarten, where several of the occupations require an attention to such differences, children of barely three years easily acquire an intelligent mastery of a dozen color-names.

(within which are distinguished as individuals the child's own mamma and the particular mammas of certain of its playmates) becomes differentiated into the more general concept 'lady,' including all adult women, and 'mamma,' including women having children. Where such development has occurred, we have a true case of logical inclusion, as is evidenced in the former definition cited: "A mamma is a lady to take care of me"—though the last word reveals the individual significance which also attaches to the term.

We have next to consider the greater survival-value of the general concept as compared with the concept of the simple object. The very fact that the reference of the general concept to conduct is a stage more indirect means that cognitive control is at once more far-reaching and more delicate. The further differentiation and integration which marks the development of the general concept means that on the objective side the situation has undergone a similar transformation. It has gained at once a far greater degree of continuity with other possible situations and a far greater individuality. The general concept provides a far more efficient instrument for the *analysis* of the situation, and it is in the analysis of the situation that the specific function of cognition consists. The increased efficiency of control manifests itself in the modification which is observable in the learning-process. When a given course of conduct fails, the individual is not left to mere groping in the dark, but there are ready to suggest themselves more or less specific alternative modes of behavior. The failure may itself be classified as falling within more or less known limits. The possibility of such classification arises from the fact that for the most part the conduct to be modified is at the level of conceptual thought—no such instinctive affair as it was formerly. Desires, purposes, intentions have undergone a process of evolution correlative to that which has taken place in cognitive life. Failure of a given action results in no vague unpleasantness; on the contrary it is a failure of definite expectations. This is true even where the failure attaches to an habit-

ual and relatively automatic act, and where the act has been undertaken with no conscious purpose. In such a case the apparent purposelessness of the act is largely a matter of attention. Once failure attracts attention to the outcome, the potential purpose of the act is at once recognized—the failure, in other words, is in effect a failure of definite expectation. This being so, it is at once attributable to some more or less definite factor in the preceding conduct. For it must be recognized that this conduct, however simple it may seem if regarded as a mere objective act (for instance the throwing of the ball at a critical point in a baseball game), is as a piece of conduct exceedingly complex, and capable of many possibilities of modification. Moreover, where conduct is controlled by conceptual thought, it is never directed by a single concept. Just as the import of a concept is expressible only in terms of indirect conditionalities of conduct, so the nature of a given act—its meaning for the individual—is expressible only in terms of an organized group of concepts. Thus the modification of the act requisite to satisfy the purpose for which it has been undertaken involves a change in this initiatory group of concepts, the specific nature of the change demanded depending on the specific nature of the failure in expectation.

A further advantage of the general concept in the control of conduct is to be found in its greater communicability as compared with the concept of the simple object. It is notorious that the development of language, other than that merely expressive of emotion, proceeds *pari passu* with the growth of general concepts. Imagine the futility of attempting to communicate the meaning of an unclassified, unindividualized object, or the paucity of a language made up wholly of proper names and interjections. Such a state of affairs temporarily exists in every child's life, when it is just beginning to talk. But obviously where speech has progressed no further than the mere attaching of names to different objects there can be little communication of meaning. What makes possible an effective communication is an apprecia-

ble degree of organization and mutual dependence of concepts. It is largely the fact that in the general concept the relationship to other concepts has come to be so distinct and to form so prominent a part of the content, that causes the development of conceptual thought and the development of language to coincide. Moreover, it is worth observing that the more indirect a reference to concrete concepts bear, the wider is their range of communicability. That is to say, where such reference is comparatively indirect, communication is possible between individuals whose experiences are comparatively dissimilar; and on the contrary, where concepts are comparatively simple, and refer more directly to concrete concepts, communication is limited to individuals whose habitual daily experiences differ little. We may see this illustrated on a large scale if we observe the effect of national and racial differences upon the cosmopolitan unity of the sciences. In the case of the more abstract sciences, such as logic and mathematics, these differences count for practically nothing. When we come to more concrete sciences, ethics and politics for example, many of the more fruitful developments have had fixed national boundaries.

In this connection it may be well to mention the reciprocal dependence of thought upon language. Whether or not it is possible for general concepts to be formed in the absence of language, we need not attempt to decide; but certainly it must be admitted that no great development of conceptual thought can take place without the aid of language. In general the advantages of language for the formation of general concepts are of two sorts. First, there is the important and evident fact, that it is the instrument of communication. It would be difficult to exaggerate the influence of social intercourse in facilitating the formation and development of general concepts. It at once fixes and corrects old concepts and suggests new ones. We have but to reflect that all science, literature, and art are social products, to realize the part played by social intercourse in our cognitive life. Secondly, the mere fact that a specific verbal

symbol comes to be attached to a given concept operates powerfully in rendering the concept fixed and definite. What frequently happens is that some image of the word (visual, auditory, or motor) becomes the habitual psychological representative through which the concept functions. The word serves thus as a sort of nucleus for the larger and looser associative organization, and thus furthers the conservation of the concept.

No modern treatment of the nature of the general concept can afford to neglect Berkeley's epoch-making theory. Nowhere in Berkeley's writings is there to be found a more brilliant or effective application of his new-found introspective method than his treatment of abstract ideas. Not only did this treatment revolutionize contemporary theories, but it has exerted a profound influence on the whole later development of psychology.

The gist of Berkeley's account of the matter is contained in the following passage. "Now, if we will annex a meaning to our words, and speak only of what we can conceive, I believe we shall acknowledge that an idea which, considered in itself, is particular, becomes general by being made to represent or stand for all other particular ideas of the same sort. To make this plain by an example, suppose a geometrician is demonstrating the method of cutting a line in two equal parts. He draws, for instance, a black line of an inch in length: this, which in itself is a particular line, is nevertheless with regard to its signification general, since, as it is there used, it represents all particular lines whatsoever; so that what is demonstrated of it is demonstrated of all lines, or, in other words, of a line in general."¹ In a closely succeeding passage, Berkeley notes that a particular idea which acquires the function of standing for a class of ideas undergoes structural modification to this extent: that those features which it has in common with the other members of the class are emphasized or alone attended to, although its peculiar features cannot be wholly banished from consciousness.²

¹*Principles of Human Knowledge*, Introduction, § 12.

²*Ib.*, § 16.

Berkeley's theory is further amplified by Hume upon two important points; first, with respect to the part played by language in making possible the function of general ideas, and, secondly, with respect to the part played by 'custom' or association in the function of representation. Upon the latter point, Hume remarks that representation implies a certain *subdued tendency to revival*, such that where the representative idea is used in a connection in which its peculiarities make it no longer typical of the class, the tendency shows itself by the replacement of the unfit representative by a more appropriate member of the class. With regard to the part played by language, Hume commits himself to the extreme view, that it is absolutely essential. The association is not so much between the various ideas of the class, as between each idea and the identical term which denotes them all. Making allowance for this exaggeration, we must acknowledge that Hume strengthens the Berkeleyan theory in no small degree. On the other hand, he fails to notice the structural modification of the representative idea to which Berkeley calls attention—most clearly, we may observe, in the latest (1734) edition of the *Principles*, which Hume may easily not have seen while working upon this part of his *Treatise*.

Regarding the mutually complementary theories of Berkeley and Hume as substantially one, we find ourselves in fundamental agreement upon the following points: that ideas connected by a relation of resemblance, reinforced by association with a common term, may form a more or less closely unified organization, such that the presence of one of these ideas (or even of the term alone) in consciousness may be accompanied by nascent tendencies to revival of the others; and that it is this complex phenomenon which is referred to under the name of 'general ideas' or 'concepts.'

Our leading divergencies from their view may be summarily expressed as follows:

1. The general concept is not identified with the representative idea, but with the total organization.

2. The point of departure in the formation of the general concept is not in mere ideas but in concepts of objects.
3. The resemblance which forms the bond of association is not (generally speaking) between the ideas themselves, but between the objects denoted by the general concept; and it is fundamentally based upon similarity of import.
4. The resemblance is such as to call for identical behavior in characteristic situations; for it is this necessity for the uniformity of conduct (in spite of individual differences) which fixes attention upon the resemblance and conditions the association based upon it.

Thus far in our discussion of the general concept we have chiefly concerned ourselves with earlier and simpler forms, in order to discover the common characteristics of this type of cognitive organization and its general function in the control of conduct. We now wish to turn our attention to some of the characteristic modifications which the general concept undergoes in the later and more complex stages of mental evolution. These modifications are immediately dependent on what we have tried to exhibit as the most notable feature of the development of cognition, namely the increasing indirectness of its control of conduct.

It will be recalled that in a former chapter pragmatists were criticized as falling into a certain confusion in regard to the end of conduct. The point was made, that while survival is the primary end (in the sense that it is the essential condition for the continuance of conduct), nevertheless it is equally true that happiness also functions as an end in the same sense; and that, moreover, happiness has come to be relatively independent, and much more direct in its influence on the development of conduct. It was further pointed out that what is a common phenomenon of all sorts of activities is to be observed in connection with theoretical activity, namely, that it comes to function in relative independence of its original end. We can now see more clearly why this must be so. As cognition grows more

efficient, it grows more indirect in the performance of its function, this increasing indirectness being intimately correlated with an increase in the organization and mutual dependence of concepts. For in order that our conduct may be successful in meeting the demands of a complex and changing life, it is necessary that the ideas which prompt it should be consistent and systematic. Accordingly there has arisen a characteristic and peculiar interest in the organization and consistency of our concepts for its own sake. Mental behavior comes to be a relatively independent sort of conduct determined by its own specific end, intellectual satisfaction. We must not, of course, fail to recognize that mental behavior can never become more than relatively independent of overt conduct. Its roots are in practical and social life, and the very condition of its health lies in an ever renewed contact with, and adaptation to, the changing phases of such life. Nevertheless it remains equally important for the understanding of the evolution of conceptual thought, to take account of its growing distinctiveness of character. It is naturally to be expected that along with this transformation in the end of thought should go certain modifications of its structure; and these we find.

First, we have to note the existence of a whole class of concepts which have arisen in direct response to the needs of mental behavior, and whose function and meaning are determined with reference to the end of this behavior. Such are the whole body of the abstract concepts of the sciences. While the development of the different special sciences has had a profound effect on practical life, yet the particular advances have been generally made without reference to practical considerations. Nor can the meaning of any single concept taken by itself be interpreted in terms of overt conduct. Many of our scientific concepts have doubtless arisen through the modification of previously existing practical concepts by a sort of analogy—as in the case of mathematical ‘continuity’ and logical ‘inclusion’. In scientific concepts content and import approach each other very closely, since the conduct to which they refer is itself the discovery of logical

relationships. Yet the distinction does not fade away entirely. In such a concept as evolution, for example, it comes out very clearly. On the side of content, evolution means a process of change distinguished by certain definite characteristics; on the side of import, it means no less than a whole new principle of classification, almost one might claim, of scientific procedure. Moreover, what we found to be true of the formation of the simpler general concepts seems to hold equally of these more complex and abstract ones—namely, that the association of the ideas composing a concept rests primarily upon the common functional significance of the objects denoted by the concept in question. This may perhaps be illustrated by the transformation wrought in the traditional biological classifications by the concept of evolution. The most advantageous principle for the classification of organic groups has come to be descent from a common parent stock. That is to say, common descent is the characteristic which calls for similar intellectual treatment of the organisms possessing it. The concept of the species thus determined accordingly comes to include as essential characteristics other common features of the organisms which it is scarcely conceivable would have been selected and associated for any other reason. Identity of import thus conditions the association of related similarities, which so become content. The basis for no scientific classification is mere unmotivated association of likenesses, however striking in themselves.

Secondly, in the later development of general concepts, there is observable the appearance of a tendency which marks the development of all organic structures, namely, the tendency toward fixity and loss of plasticity. In the case of the concept this increase in fixity seems to be reinforced by the necessity of counteracting the unwieldiness of the more general concepts, arising from the great complexity of their organization. The fact that the development of these more complex organizations depends upon their mutual dependence and relationship within a

system makes desirable a growing definiteness and fixity of the internal structure of the concept. This is the phenomenon which we find in *definition*. Definition is a singling out of certain features or certain elements of the total meaning of a concept and regarding these as essential, while other more loosely associated ideas are more or less effectively excluded. Even before intentional and formal definition takes place, however, this process of centralization has been at work; and to a large extent the formal definition merely recognizes and confirms the segregation which has already taken place. It is of significance that this segregation, or definition, involves the selection of a comparatively small group of associated concepts, the relationships to which become constitutive for the concept in question. What thus takes place in the course of intellectual evolution is that the organization of concepts tends to fall into groups, varying in size and in the closeness of their interrelations. At the one extreme are the loose apperceptive systems of common life, which vary with occupation, habits, and interests, as well as from individual to individual; at the other, the special sciences. It is within these last, and particularly within the abstract sciences, that the process of integration and fixation of concepts has been carried farthest. Because the special science is so remote in its reference to common life and so entirely controlled in its progress by its own special end, it becomes a system relatively independent of the great body of cognitive experience. The increasing determinateness of its peculiar field, the increasing definiteness of its peculiar presuppositions, impart a high degree of stability to its distinctive concepts.

But it seems impossible that the definiteness and fixity—the 'clearness and distinctness'—of scientific concepts should ever be more than approximate. The meaning of the associated concepts, in terms of which a given concept is defined, must itself be determined in relation to yet other concepts. For if it were possible to restrict the meaning of a group of concepts to the

mutual relationships within the group, the group as a whole would lose all connection with the developing body of cognitive experience—it would be simply a useless mass of dead matter. In other words, an uneliminable condition for the continued functioning of a concept is its very plasticity and indeterminateness—its lack of 'clearness and distinctness.'

CHAPTER V

PRAGMATISM AND THE FORM OF THOUGHT

We propose to bring together in this chapter certain considerations bearing upon the contempt for formal logic which prevails among pragmatists. It appears to us, and we shall try to establish the contention, that this contempt and the hostility which it has inspired have no reasonable excuse; that they have arisen from an unwarranted exaggeration of the legitimate consequences of the pragmatist theory of truth.

The general position which we are to criticise may be briefly indicated as follows.

Consciousness is a function of the animal organism which has developed by reason of its utility in various types of situations. The intelligent study of consciousness will not attempt to separate it from the conditions under which its present characteristics have been acquired and to which its various structural relations owe all their functional importance. To make such a separation is to be committed to a formalism as shallow as that of an engineer who should analyze and describe a complicated machine without reference to the work for which it was designed and by which the proportions and interconnections of all its parts were determined.

If consciousness is not to be studied as a thing-in-itself, still less is logical thought. For the latter is but an episode in the life of feeling. It has its rise in the unpleasant strain occasioned by the failure of an habitual mode of behavior; and it has its normal conclusion in the satisfaction attendant upon successful readjustment. All real thought is essentially practical, in the sense that it is devoted to the solving of problems arising out of the exigencies of conduct, and that when a solution is reached behavior is modified accordingly. Thought is therefore not to

be studied to greatest advantage in those of its manifestations where it is as nearly as possible idle—where needs are fictitious, interest lax, effort subliminal, and the entire operation is scarcely more than the repetition of a form of words.

When thought is seen at work, the meaning of logical validity is clear. Valid thought is efficient thought, thought that accomplishes its function of controlling conduct in accordance with the needs of the organism. The notion, that apart from its proper function thought may possess a peculiar intrinsic, or formal, validity, is delusive. A form of thought, as distinguished from its content, there is none.

Hence the futility of formal logic. It is the physiology of a corpse—of thought which is without function and without life. Even the Hegelian dialectic is better; for in spite of willful abstraction one cannot think the categories without surreptitiously bringing in something of their concrete significance, and it is to this that whatever insight is therein displayed is due. But formal logic, the science of every thought and none, is at the limit of possible insignificance. Any access of sense is rigorously cut off.

This judgment of the supposed science of thought is strongly confirmed by an examination of the specific content which it has accumulated. We find a body of formulæ, which are fitly expressed, not in words with their wide and shifting associations, but in bare and simple algebraic symbols. Do these formulæ constitute a description of any actual thought? Who knows? The logician, as logician, does not care—except that he would like to think that his logic itself is logical, *i. e.*, conforms to its own canons; but this he knows he cannot show. But the intention of the formulæ is not to describe actual thought (which may be logical or illogical) but a certain type of ideal thought. Whether any such thought has occurred or will ever occur, is a secondary consideration.

The most striking characteristic of the ideal thought is the absolute fixity of its terms. *A is A*, and *A is not not-A*, are classic expressions of this feature. The most striking character-

istic of actual human thought, at least to the observation of the trained student of human nature, is the more or less limited fixity and stability of its terms. They are products of an evolution which still proceeds. And though we cannot in many instances distinguish, or even imagine, the particular changes that may have taken place within the period of human history, and must even grant that certain concepts have, in all probability, remained substantially unchanged for ages, we cannot avoid recognizing at least the possibility of their future modification. In no case have we sufficient warrant to guarantee the permanent fixity of the existing forms; and, in fact, it is only within the domain of the mathematical sciences that such fixity could be claimed with any show of reasonableness. Of the great mass of our concepts we can scarcely doubt that they are changing now more rapidly than ever before.

But where concepts are undergoing an evolution, a precise clearness cannot be expected. Where distinctions are hardening and melting away again and shifting generally, it is impossible that dividing lines should be shadowless and unbroken. Bacon's aphorism, that ultimately satisfactory definitions belong, not to the initial stages, but to the consummation of the sciences, is significant to us as the description of a never to be attained ideal. The conviction of clearness is common enough. But we have well learned that there is no more suspicious indication of shallowness of mind. The nearer any concrete reasoning approaches the mathematical type, the readier we are to condemn it as doctrinaire.

The weakness of the syllogism, that supposed universal form of thought, is now evident. The possibility of drawing a conclusion depends upon the exact identity of the middle term in the two premises. But who shall vouch for this? Not to the satisfaction of common sense alone, but in accordance with the canons of the syllogism itself? For by these canons the least variation constitutes a *quaternio*, and no valid inference is then possible. In fact, so far from being an absolutely certain mode

of inference, the syllogism is dangerously deceptive, just because it effectually conceals the evidences of its weakness. The syllogistic axiom, the *dictum de omni et nullo*, pretending to represent the essential form of thought in abstraction from all particularity of content, is, in reality, without application to any content whatsoever; for its terms require just that fixity and clearness which the thoughts of men can never claim.

The pragmatist theory, that all meanings refer ultimately to correlations of stimulus and response, can be accepted only with certain reservations, which may be summed up in the statement, that such reference is never direct and never univocal. Let us consider the latter qualification first.

A concept is never univocal in its reference to a mode of conduct; that is to say, its meaning is never limited to the correlation of a certain type of stimulus with a certain response. On the contrary, its import invariably embraces a variety of actions under different circumstances. To take a simple example, the concept of the straight line means that when we wish to look at one object we must take care that a second does not stand in the way; a circumstance which, when it occurs, may be obviated by moving either of the objects, by standing aside, or by changing the attitude of the body. It also means that in order to hit an object with a missile we must throw it in its direction; that in order to reach a destination with the greatest promptitude, we must travel directly toward it; that in order that a rope may not sag it must be stretched taut; and so on, practically *ad infinitum*. So also an apple means to us the eating of it, if it be sound and sweet and our appetite be so inclined; the paring and coring of it, if need be; the removal of a worm or bruised spot perhaps. And the case is not different with such concepts as joy and sorrow, pity and scorn. We may add that even when the particular situation is given, the concept never determines a specific appropriate adjustment. The immediate one-to-one correlation does not fall within the function of thought. That remains the func-

tion of older and simpler agencies. Our thoughts direct our conduct, and it is in this service that their meaning ultimately consists; but every concept means both more and less than any particular application of it contains.

To this we have added that the reference of a concept to a mode of conduct is never direct. The concept never directly bridges the gap between stimulus and response. On the contrary, thought is a long-circuiting of the connection, and its whole character depends upon its indirectness, its involution, if we may use the term. Though concepts, apart from the conduct which they prompt, mean nothing, yet their meaning is never analyzable except into other concepts, indirect like the first in their reference to conduct.

But does not this really do away with the reference altogether? It certainly would, if concepts were ever (in the rationalist's sense) perfectly clear, if their implications ever became perfectly explicit. But as thought always arises as a problem, so it always remains more or less problematic, for that is what lack of clearness amounts to. Every concept involves an indefinite number of problems; and these cannot be stated except in terms which themselves in turn involve indefinite series of problems. Nowhere is there an absolute given, a self-sufficient first premise. From this, as well as from the indirect and equivocal nature of the reference of thought to conduct, it follows that the confirmation or invalidation of a concept by the result of the conduct which it serves to guide can itself be no more than tentative. But this does not mean that it is unreal or unessential to the nature or development of thought.

These considerations, however, have a decided bearing upon the pragmatist contention, that apart from its reference to conduct thought has no form. This is naturally understood to imply that the nature of thought may be exhaustively described in the statement of its relation to conduct. Now it is very probable that the statement of the relation between two terms may be indefinitely developed, so as to include any assignable attribute

of the terms in question. But at any stage of scientific progress all this remains an abstract possibility; and the degree in which the statement of a relation is actually comprehensive of the otherwise known content of its terms is capable of indefinite variation. And with respect to thought and conduct it must be said that the very indirectness and equivocality of the reference of the former to the latter gives thought a character of its own, which is as independent of aught beyond as can well be imagined. The more meaning is read into this particular doctrine, the less truth there is in it. Apart from the reference of thought to conduct, that is to say, in the limitless interrelations of concepts with each other, thought has as distinctive a form as any abstractly considered entity whatsoever.

What, then, shall be said of logical validity? Is it true that this does not attach to thought considered in abstraction from the control of conduct—that its only test is the practical one, the cessation of thought itself when its task of readjustment is done? For the reasons just given we cannot assent to this. The very indirectness of the reference of concepts to modes of reaction implies that the interrelations of concepts which mediate the ultimate practical reference must have a character of rightness or wrongness in themselves. To say that without the ulterior test of workability all other rightness or wrongness would be fictitious is to interpose an idle objection. For the point precisely is that without a characteristic organization of the content of thought the practical significance of thought would itself disappear.

The fact is that according to the common pragmatist view a chain of reasoning would be altogether impossible. For in such a chain each link must be valid if the whole is to have any strength. But the test of practice obviously cannot apply to the separate links; it can only indicate in a general way the profitableness of the whole procedure. If the test fails, that alone does not determine where the difficulty lies. It is, indeed, implied, that each valid link, if separately tested—or if tested

in a variety of connections, such as would throw its own strength or weakness into relief—would lead to satisfactory results. But in the chain of argument no such procedure is ordinarily contemplated. On the contrary, each conclusion reached in the course of the argument is regarded as proceeding immediately from its premises; and it is upon that supposition that the reasoner advances to the later conclusions.

But it is not only the chain of reasoning that cannot be accounted for on the pragmatist basis. The simplest conceivable argument, in which premise and conclusion are distinguished, becomes equally inexplicable; and this can be shown from an example which is in constant reference by the pragmatists themselves. Let us suppose that the truth of a general hypothesis has been tested in the case of a particular instance, and has been found in want of correction. Here, on the basis of the hypothesis under consideration, something is inferred as to the results of acting in a certain way under certain circumstances; and this conclusion, as compared with the observed results, is found to be false. What now constitutes the validity of the inference which led to the admittedly false conclusion? The whole procedure depends upon this point, and yet just this point is submitted to no practical test. To be sure it may be said that similar inferences have in the past been found to be correct. But, in the first place, it is probably not on the basis of such a comparison that the untrue conclusion is accepted as correctly derived. That is seldom a matter for reflection. And, in the second place, we must observe that the pragmatist theory fails equally to explain the correctness of an inference from true premises. In a word, the theory does not distinguish between the *correctness of an inference* and the *truth of its premises*, and hence virtually eliminates the former altogether.

So far as we are aware, this result can only be avoided by an interpretation of pragmatism in which its opposition to formal logic is given up. It is pointed out that the acceptance of a conclusion as satisfactorily derived, with the consequent passing

on to the drawing of further inferences is itself a piece of conduct in which earlier thought finds its extinction; and that the meaning which we ascribe to the term 'validity' is exhausted in its reference to such conduct. To this we have no objection; but we think it necessary to call attention to several important features of the argument.

In the first place, the conduct just mentioned is not to be confused with the conduct to which implied reference is made in the conclusion. Suppose, for example, that it has been demonstrated by the methods of elementary geometry, that a triangle is determined by the length of its three sides. This is a most useful principle in many lines of activity, very conspicuously in building. It means, for one thing, that a triangular structure made of stiff material is non-collapsible, even though its corners be hinged, and, consequently, that such a structure has no need of further bracing. The rectangle is known not to have this property; and accordingly a frame of that shape is frequently given greater rigidity by constructing a triangle in one of its corners. Now it is in its reference to such practical applications as this that the meaning of the proposition consists; and its truth is confirmed by the satisfactory issue of the conduct thus prompted. The point to which special attention must be called, is that, according to the interpretation of the pragmatist doctrine which we are now considering, this is not the conduct in reference to which the validity of the demonstration itself has its meaning. The meaning of 'validity' is found in *the characteristic mental procedure involved in accepting the conclusion as warranted by the premises*, and which would be generically the same, whether the premises (and accordingly the conclusion) were regarded as true, as probable, as possible, or even as contrary to fact. Here, as elsewhere, of course, no single definite act can be pointed out as unequivocally referred to by the concept; but that fact offers no greater difficulty here than in the case of physical behavior.

In the second place, it is implied that apart from the interest attaching to the environmental situation which indirectly promp-

ted the whole argument, there is likewise a specific interest attaching to the logical situation as such. This situation is formulated in a problem, the solution of which is contained in the acceptance of the conclusion as correctly derived. That such a specific interest exists is very commonly believed, and is by no means an untenable hypothesis. Logical validity is thus recognized as a kind of value depending upon a specific sentiment and as in so far comparable to esthetic and moral values.

In the third place, the special point which we have had in view throughout this digression is now readily established,—namely that the opposition of pragmatism to merely formal logic has no solid basis. The familiar pragmatist doctrine, that thought has no validity apart from its function in controlling conduct, seems like a subterfuge when we reflect that the conduct to which logical validity refers is logical procedure itself. It is no subterfuge, however, but only the result of an afterthought which reestablishes what at first sight seemed done away with. And after all, though the negative result proved deceptive, the positive results which may be safely enumerated are not small. It is no small gain to have learned, that in so far as thought has a distinctive form, it must be viewed as purposive behavior animated by a distinctive human interest. It surely is not a less welcome, because a somewhat unexpected, outcome of the pragmatist philosophy, that theoretical values as such are restored to their ancient position of dignified independence of more narrowly 'practical' needs.

Let it be noted that in asserting against the pragmatist the indispensability of the conception of a form of thought as such, we do not commit ourselves to any dogma as to the universality or permanence of this form. We need assert no greater claims for the form of thought (however it be expressed) than we are ready to assert for the fundamental laws of mechanics. In either case, if an absolute exist we can never know it; and any ascription of qualities to the unknowable is sheer play of fancy. The form

of thought, as we know it, though fairly clear in certain respects, is sadly obscure in some others. Our conceptions of it have undergone some very decided modifications in the past, and no doubt will be profoundly modified in the future. The assertion, then, that thought has a universal form, could we but know it, is without scientific significance. And to assert absolute universality for any statement of its form which we can make, is to lapse into indefensible rationalism.

Nor, for similar reasons, are we committed to any dogma with regard to the relation of the form of thought to its content. We must, however, frankly admit one necessary assumption,—namely, that hypothetically to recognize any definite form of thought at all is hypothetically to recognize it as a universal under which various contents are subsumed without change in itself. But the self-contradiction—if such there be—is no greater than is involved in any general proposition whatsoever. For no proposition can contain the confession of its own impermanence. And it is of no avail to object that ‘form,’ as distinguished from ‘content,’ is a category of ignorance or of imperfect knowledge; for so are all our other categories.

Herein, though we have departed from the letter of the pragmatist doctrine, we believe we have remained true to its deeper spirit. Our criticism is, indeed, that it has contained a vital inconsistency. In the theory of inference that inconsistency appears as a denial of the reciprocity of determination, as exemplified in the relation of premise and conclusion. Whereas rationalism had made the former prior in authority, pragmatism has simply reversed the order of dependence and made the conclusion prior to the premise. Thus, for pragmatism as for rationalism, the inference has ultimately vanished altogether.

It is not necessary for us to examine at length the specific criticisms which the pragmatist urges against the traditional schema of the form of thought, namely, the syllogism. It is true that the formula of the syllogism does imply that the terms are distinct and fixed in meaning, at least so far as to ensure the

universality of the major premise and to exclude a *quaternio terminorum*; and it is possible that this condition is not satisfied in any real deduction. But the answer is, that deduction is a thought-process in which ideas are regarded *as if they were fixed and distinct*; and an ample justification of the process is the fact that ideas *must* be so regarded if their specific obscurities and self-contradictions are ever to be exhibited and removed. It is by working our ideas for all that they are worth, that their limitations are brought to light. Is the syllogism a true account of the deductive process as it goes on in our minds? We cannot say that; for, in the first place, it would claim for the doctrine of the syllogism an absolute certitude which we are not disposed to claim for any knowledge whatsoever; and, in the second place, we know in a general way that obscurity and vacillation everywhere pervade our thought. But in a specific instance, the syllogism may well enough describe our thought, so far as our perception of its significance yet extends; and when that perception becomes deeper, we no longer call the total process, as thus distinguished, deduction. And furthermore, at any stage of progress, the syllogism is the form which the clearest of our thought appears to take. In so far, the rationalist was undoubtedly right in his conception of deductive certainty as the ideal of science. He did not see, however, that it is an ideal which can only be progressively realized,—that its absolute realization would, indeed, be the extinction of thought altogether. If there were any such assured knowledge as the rationalist dreamed of—final, irreducible, modifiable only by accretion—his logic would have been unanswerable. It is our sense of the universal process that for us limits the truth of his account to a temporal cross-section of knowledge, regarded as if it were eternal.

Very similar must be our comment upon the pragmatist's treatment of the conception of fundamental categories of thought. Despite its lack of finality the conception has a very considerable degree of usefulness. Kant is popularly believed to have been one of the most wanton of theorists, exceeded in this respect

only by his romantic successors,—a self-centered recluse who unrestrainedly piled speculation upon speculation, with the slenderest basis of observed fact. The student of Kant knows that his is not true,—that among all philosophers ancient and modern he is unsurpassed both for the breadth of scientific observation which went to the forming of his views, and for the rigid faithfulness with which he persisted in his observations and refused to indulge in gratuitous hypothesis. To adopt a phrase of the nature-poets, never was there a man who more invariably wrote “with his eye on the object.” It is, indeed, in consequence of impartial fidelity to matter-of-fact, that the volumes of his critical philosophy are unusually full of naked paradox—short of formal contradiction, no consideration could lead him utterly to exclude a well attested datum of experience. To this general character of his thought, the doctrine of the categories assuredly presents no exception. If we can no longer accept that doctrine in its historical form, our dissent is due neither to faulty observation in the premises nor to fallacy in the reasoning, but to a radical transformation in the whole body of logical theory in which the conception of categories has its place. To the array of tolerably evident facts which the Kantian doctrine represents a respectful interpretation must still be given.

These facts may be briefly enumerated as follows. We are in possession of a number of very general principles, to which we attribute a truth that is not conceived as open to correction by any experience; inasmuch as all the particulars of experience are interpreted in accordance with these principles, and any observation which apparently contradicted them would rather itself be denied than cause a modification in these principles. These principles are obviously synthetic, and thus open to formal questioning, and no demonstration of their truth can be given; but they constitute the most comprehensive organization of our experience, and it is in this function that their validity consists. The reality of phenomena in our experience has no further assignable meaning than their conformity to these most general conditions of experience.

How these facts were interpreted by Kant need not now concern us, except to note that in that interpretation the possibility of an evolutionary explanation of them was definitely excluded. Herein Kant remained a rationalist. Thought, for him, must operate with concepts, to which the laws of contradiction and of the excluded middle applied absolutely and without reservation. That, measured by such a standard, the fundamental categories of the understanding should be false—that the unity of experience which they mediated should be imperfect—was not for him a real possibility. His problem did not include it. Thus the scepticism which he refuted was one which left the analytical judgment unquestioned. It was only the fact of synthesis that suggested doubt, and this only in so far as universality was claimed for it. The very enterprise with which the *Transcendental Analytic* sets out—the formation of a definitive and complete list of categories, as if that were a thinkable performance—is sufficient to indicate his attitude in the matter. And the completeness of the list in which the metaphysical deduction issues is an important premise in the later argument. It is upon this that the indispensability, and hence the unquestionable validity, of the categories depends. These and no others must perform the function which they perform—because there are no others.

In place of this persistent dogmatism, we would rather observe that when a succession of concepts appears, each of which has arisen as a modification of the preceding complex, a certain relative stability belongs to the earlier members. Not as if temporal priority gave a logical priority in the ordinary sense of the term; for the later does not come as a mere accretion to the earlier, but as a modification of it which goes to the formation of a more complex unity. But the earlier has nevertheless this preference: that, as the further revision of the complex becomes necessary, this takes place, as far as possible, in the later elements; and only such portion of the correction as cannot be made here is passed back farther and farther, until the disturbing conditions are satisfied. This, indeed, appears to be a general characteristic

of all evolution, and forms a part, at least, of what is commonly alluded to as the 'continuity' of the process. It may, therefore, naturally be expected, that among our concepts there are certain ones which are not observably affected in the course of ordinary experience, and thus stand to the whole of our thought as nearly as possible in the relation of an *a priori* ground. Such we may well enough designate the 'categories' of our thought; but they will obviously lack certain of the important characteristics that have traditionally been associated with this term. They are not forms of thought as distinguished from its content; they are not final or unmodifiable; we cannot affirm that they are true of all possible experience. In short, they are to be distinguished by no hard and fast line from the other concepts of the understanding.

What, then, is the practical use of the distinction? Simply this: that, when we try to give an account of the concepts which appear to be fundamental in all our thinking, we find that they form a quite closely articulated system—not so perfect, doubtless, as the absolute idealist would have had us believe, but still a system, and the most permanent factor in our thought. If we, then, regard our present knowledge as a cross-section of an evolutionary process—a loose procedure, if judged by too scrupulous a standard, for our present knowledge continues its development while we inspect it; but none the less a necessary procedure—the system of categories stands out as an *a priori* element in our thinking, a pure form of thought, logically prior to all the particularity of experience. That is to say, we find ourselves virtually at the standpoint of the critical philosophy—with this exception, indeed, that we do not regard it as an ultimate standpoint, and hence no longer expect a self-sufficient completeness in the view of reality which it affords. In the sense of this exception, the critical standpoint has, we believe, been transcended; but we must still return to it for observations of the utmost scientific importance.

It is in this light that we must regard the logical researches of Kant's successors, and in particular those of Hegel. We have

already expressed our reasons for the opinion, that, in spite of important divergences, Hegel's epistemology is still fairly to be classed as a form of rationalism. Although more to him than to any other man is due the elaboration of the logical conceptions which appertain to general evolutionary theory; and though he applied these conceptions with wonderful insight to the study of the development of thought; yet that development, as he conceived it, was a movement within a system, not of a system, for the system as such was completely determined by its absolute end. For this reason he could not dispense with the essentially rationalistic conception of pure—that is to say, *a priori*—thought, and whatever may be conceived to have been the psychological history of his logic, it stands in its full rounded completeness as a schema to which nature and spirit universally conform. But, when the extravagances to which his absolutism led him are, as well as may be set aside, and the *Science of Logic* is viewed as a provisional solution of a problem, which, from the terms in which it is stated, can never be adequately solved, it becomes a treasure-house of inestimable wisdom, which the pragmatist, of all men, cannot afford to despise.

APPENDICES

APPENDIX I

THE PRAGMATIC METHOD, THE WILL-TO-BELIEVE, AND HUMANISM, IMMEDIATISM

In almost all expositions of pragmatism that have received wide attention, a foremost place has been given to the so-called 'pragmatic method.' In spite of this prominence, the method has been, of all parts of the pragmatists' program, the most generally misunderstood both by the larger public and by the technical reviewers. How far the expositors have been to blame, and how far the incautious readers, we need not determine. But we shall try to profit by the experience of others, by putting into italics a warning against the commonest misunderstanding.

The pragmatic method is a method of explanation, not of proof. It is used to determine the meaning of propositions; but, except in cases where it turns out that the proposition has no meaning at all, the truth or falsity of the proposition is not brought into question. It is true that the results of the exposition may be seized upon by the 'will-to-believe,' and the alternative of truth or falsity may be thus settled; but that is a further distinct step.

The method is based upon the following assumption: that every distinction in meaning between ideas is a distinction between possibly desirable modes of conduct. *It is inferred*, that the meaning of a proposition may be determined by showing the differences in conduct which its truth or falsity would call for; while a proposition whose truth or falsity can under no conceivable circumstances affect the conduct of anyone is meaningless. Thus the meaning of the existence of God is that a man should persevere in right conduct, despite the apparent triumph of evil; and the meaning of the freedom of the will is that a man should not commit suicide from fear of ennui, but live in the expectation of continual novelties.

Suppose the fundamental assumption to be correct.¹ The method is nevertheless defective. It prescribes no means of determining whether the differences in conduct that are pointed out are the only ones that can arise from the truth or falsity of the proposition, or even that they are the sole important differences. A meaning is discovered; but no assurance is given that this is the whole meaning, or even the principal meaning of the proposition. Hence, even though the instrumental theory of meaning be correct, the pragmatic method is intrinsically fallacious.

A possible exception to this general fallaciousness remains. If it is indeed demonstrable that the truth or falsity of a given proposition could in no way affect the advisability of conduct, the proposition must, upon the instrumental theory, be meaningless. But when we examine the illustrations of this contingency that are given by pragmatists, it becomes clear that the pragmatic method is entirely non-essential to them. What is invariably proved is that the proposition in question cannot be confirmed or contradicted by any conceivable experience; that is to say, whether the proposition is true or false, no possible experience would be different. In the words of the well-known formula (already quoted), there is no difference in the "sensations to be expected," and *hence* no difference in the "reactions that are to be prepared." But in such a case the proposition is meaningless, not only upon specifically pragmatist grounds, but on the basis of a pre-evolutionary empiricism. In fact, Berkeley's proof of the meaninglessness of the assumption of material substance—that it is incapable of verification or disproof—is hailed by the pragmatists as an admirable application of their method. But the reference to conduct is altogether lacking. Now it is true that where there is no difference in the phenomenon there can be none in the behavior which it calls for; so that the practical reference can be freely supplied if one wishes. But it

¹It should be noted, however, that this involves an isolation of 'import' from 'content,' which we can by no means admit.

is a mere addendum, which contributes nothing to the force of the argument.

The pragmatic method, then, is either fallacious or superfluous.

In current philosophical literature the name 'pragmatism' has been used to cover any sort of attempt to eliminate ambiguity in the use of terms—perhaps from the conviction that any other mode of thought is at bottom mere verbalism. Thus the distinction of various senses in which the world may be said to be 'one' or 'many' is called pragmatic, though it is carried on as the veriest scholastic would require. To 'go around' an animal may mean to go north and east and south and west of him; or it may mean to go in front, on one side, in the rear, and on the other side of him; and to note the two-fold usage—though without the remotest suggestion of any practical difference to the animal or his satellite—is called pragmatism. But this simply robs the term of any controversial importance; and it has no warrant in the formal descriptions of the method, given by its advocates.

A second feature of pragmatism, which we believe to be foreign to its deeper spirit, but which is popularly regarded as constituting its very essence, is the theory of the 'will-to-believe.' It may be formulated as follows: Where alternative hypotheses are presented, whose probability, so far as determined by existing evidence, seems fairly equal; and where the belief in the one alternative, were it verified by the event, would produce a satisfaction so far greater than would in any case follow either from uncertainty or from the acceptance of the other alternative, that any relative deficiency of happiness which might arise from the acceptance of the former, in case it were not verified, would be negligible in comparison; there a belief in the former hypothesis is warranted—that is to say, the former hypothesis may rightly be regarded as indefinitely the more probable.

It must be noted that the above statement of the theory differs in one important respect from Professor James's enunciation. We have omitted the proviso that a choice of alternatives be

necessary; for we cannot see that this is ever the case. Where a question is possible, doubt is always possible. But it is said that to doubt may be practically the same as to accept one or other of the given alternatives. This is true; and if the theory in question referred to the wisdom of action instead of the validity of belief, we should have no quarrel with it. But we must not confuse the acting on a chance with a confidence in the outcome. Hence in our statement of the will-to-believe principle, we have included the state of doubt as a third real possibility; grouping it, however, with the acceptance of one of the alternatives in such a way as to leave the pragmatist position virtually unchanged.

It must next be noted that, according to the premises laid down, the happiness consequent upon belief is supposed to be directly thus consequent—not an after-effect of conduct dictated by the belief, but the immediate effect of the belief itself. For if the happiness were supposed to flow from a course of conduct, then that same course of conduct would be equally dictated by an uncertainty in the matter. That is to say, of two conflicting courses of conduct, having apparently equal chances of success or failure, a man would wisely choose the one which promised the greater gain in proportion to the risk involved, even though he had not the least confidence that a favorable rather than an unfavorable issue would result. In other words, an absolute uncertainty as to the result would logically warrant the same course of conduct as would be warranted by an entire conviction as to the certainty of a favorable outcome. The happiness proposed must, therefore, be conceived to be a direct fruit of the belief as such. How far this is removed from the spirit of pragmatism need not be emphasized.

In order to escape this interpretation a new premise must be added to those above specified; namely, that even though the same conduct might be dictated by belief and by doubt, yet only the belief in the particular outcome could so strengthen a man as to enable him to act in the manner necessary for success. Now this is by no means an impossible supposition, and it is

one that is made without hesitation by pragmatist writers. And yet we question whether any particular instance can be cited, in which this supposition can with any assurance be said to be realized. Fanaticism has, indeed, a very considerable degree of strength; but so has a cool, self-restrained balance of judgment. It is well enough to say in general terms that confidence in success may be the one thing necessary to assure success; but it would require the prescience of a writer of fiction to determine such a case. For the truth, after all, is notorious, that though confidence is a good thing, it is likewise an exceedingly dangerous thing.

In any case, however, it is worth while remarking that this peculiar validation of belief takes place only when evidence to the contrary does not exist. It is only where a free field is open to it that it can accomplish anything; but then its efficacy is extraordinary. Without exaggeration we may say that in its relation to actual evidence it constitutes a dualism of orders of truth. Accordingly, the scientific procedure which it suggests consists of two distinct steps. In the first place, one must find whether a free scope for the will-to-believe exists, that is to say, whether there is a practically entire absence (or balance) of evidence on the subject; and, in the second place, if one feels so inclined, one takes the voluntary step of putting faith in the alternative preferred.

A familiar example may serve to make this point clearer. Let us suppose that it is the doctrine of human immortality which the pragmatist proposes to establish. The general conformity of the doctrine to the conditions above laid down is as close as one could expect. The belief is capable of producing in many minds (possibly, therefore, in the mind of the reasoner) a great and lasting satisfaction which is sufficient to outweigh many of the evils of life; and if it prove in the event to have been illusory, any possible ill effects are cut short at the same time. The fearful misery which a belief in immortality may bring upon society in this world, in consequence of a possible distortion of

the values of things, may be regarded as negligible. The two steps of the pragmatist's procedure are then quite clear. In the first place, he feels it incumbent upon him to meet pertinent objections to the doctrine; and this is done according to the ordinary methods of logical procedure. But when this is successfully accomplished, he then, in the second place, cuts the processes of reasoning short, and, with a distinct and final act of belief, commits himself without question to the supremely valued dogma.

Now how is it that this curious theory has become identified with that great leveler of all dualisms, pragmatism? A superficial resemblance is not far to seek. According to the functional conception of truth upon which pragmatism is based, the validity of a proposition depends upon its satisfactoriness as a working-hypothesis in the accomplishment of intelligent purposes; it is true 'when it works.' And according to the will-to-believe theory, too, the belief is true because it 'works'; but its working means, not its verification in the successful accomplishment of intelligent designs, but simply the pleasantness of the idea itself, or the encouragement given by it.

In short, the will-to-believe, instead of going to substantiate the essential doctrine of pragmatism, that logical validity is throughout conditioned by interests and values, implies, by the very particularity and circumstantiality of the connection which it asserts, that no more complete and intimate union between them exists. In this respect, the will-to-believe presents an instructive analogy to the transcendent ideas, by means of which Kant attempted to bridge the gap between theoretical and practical reason. In each case, the resort to special means of connection is a confession of the utter divorce of reason and will assumed at the outset.

At bottom, the will-to-believe theory is a relapse into dogmatism. Somewhere, it is felt, amid the sea of fleeting experiences an anchorage must be found; and if within the limits of logical thought no firm bottom can be reached, then it must be sought

for in feeling or in will. Upon the hopelessness and the uselessness of such a procedure we shall not dwell.

The word 'humanism' has been used in recent philosophical discussion, in a variety of senses, which our present purpose does not require us to enumerate and distinguish. In its widest sense it includes every attempt or tendency to interpret the macrocosm in terms derived from the analysis of the microcosm. According to this interpretation, Augustine and Campanella are humanists *par excellence*. Taken more narrowly, it may denote the pragmatist theory of reality that was outlined in a previous chapter; the theory, namely, that was condensed into the formula, that the real is the object of interest. We propose to use it here in a sense which must be carefully distinguished from both of these, the rather because in recent controversy it has been closely associated with them. It is the theory that all reality is to some extent man-made, and hence may be—to an extent to be discovered only by actual trial—modified and controlled by human efforts.

We shall try to show that this theory has only a very limited controversial significance; that it is wholly unsupported by evidence and is without possible application; in short, that upon admitted pragmatist principles it is meaningless—though not more so than the doctrines which it opposes.

The most prominent of these is a degenerate Hegelianism, which finds some support in the writings of the master, but really amounts to an exaggeration of his weakest traits—according to which the absolute exists complete in the temporal present. In our opinion this view is not worthy of serious discussion, except upon the ground of its supposed wide acceptance by teachers of philosophy; and we believe that most of those to whom it is attributed would upon a direct challenge repudiate it. The absolute of Hegel's philosophy is the evolving universe, not at a single point of time, but conceived as embracing its whole development. What it is *now* is merely a step toward what it

is to be. It is *eternal* in the sense that in its development it is wholly self-determined. Hegel interprets this last statement as implying that the development is logical rather than temporal; the historical process, he finds, contains much that is irrelevant and non-essential. But it is a caricature of his teachings to declare that the entire development exists *now*, except in the sense in which the oak is present in the acorn. And apart from considerations extracted from Hegel's works we are aware of no inducement that has been offered for the acceptance of such a doctrine.

In insisting upon the reality of change, the humanist is thus in partial agreement with absolute idealism. According to the latter, some change is real (or *actual*, if we hold to the more precise Hegelian terminology), namely, evolution. Indeed, Hegel in his day believed his philosophy to be distinguished from the older rationalism, by his acceptance of a developing reality; and the criticisms which his dialectic had then, as more recently, to endure from conservative thinkers are exceedingly similar to some which his present-day successors are urging against humanism.

The radical difference between the humanistic position and absolute idealism lies between the pluralism of the former and the monism of the latter. Even this difference may easily be exaggerated. It must not be forgotten that Hegel believed in the presence of an element of contingency in all phenomena, though he regarded this as merely evanescent. Only the rational, that which is bound up with the constitution of the universe, could endure. The humanist, on the other hand, believes that the universe contains within itself agencies which are not completely determined in their activity by the universe as a whole, but which may, to an indefinite extent, affect the future history of the universe. That is to say, humanism (in the sense here treated) is a theory of the freedom of the will. The distinctive character of the theory comes from its supposed connection with the pragmatist logic—to which we must now turn.

The connection is made out in several ways, which require separate examination.

In the first place, it is held that a complete determinism is a mere rationalistic assumption, exalted into an axiom that is not subject to correction by any evidence; while an indeterminism, which leaves the relative scope of freedom and necessity open to empirical enquiry, and is satisfied with any amount of indetermination above absolute zero, is relatively open-minded. The latter theory is, therefore, the one which the pragmatist, holding to the practical character of all knowledge, is bound to prefer; though the former is not excluded as an utter impossibility.

In reply we should call attention to the fact that no experiment can be imagined, the result of which would be noticeably different according as one or other of the opposed theories was true. So far, then, from entertaining a preference for one or the other theory, pragmatism (like any other thorough-going empiricism) ought to regard the difference between them as illusory. Such, upon a closer examination, we find to be the case. The crux of the matter lies in the unlimited indefiniteness of the term 'determination' and its equivalents and correlatives, such as 'causation' and 'necessity.' Determination, as we know it, is of various types, under various conditions. These types are not related to each other as species of a precisely definable genus, but as analogous forms for which a proper genus remains to be found, and to which additions may be made that call for modification of the genus. Consider in this connection a few of the meanings which have attached to the term 'causality.' It is the communication of motion by impact; or the relation of premise to conclusion; or the relation of antecedent to consequent in a uniform succession; or the transformation of energy: the only causes are moving bodies; or spirits; or ideas; or emotions; or truths; or events: there may be distinct chains of causation; or the only proper connection may be between the universe as a whole at different moments; or there may be distinct initiations of causal activity, though the scope of their effects is forthwith universal. Never

was there an axiom more stoutly maintained, or more empty of definite signification, than the so-called law of cause and effect. Kant (in the first edition of his *Critique of Pure Reason*) announced as an *a priori* principle of the understanding: "Everything that happens (begins to be) presupposes something upon which it follows according to a rule." Probably few living scholars would accept this formula as absolutely true. It appears, for example, to imply the existence of distinct chains of causation.

What, then, of the strife between determinism and indeterminism? If any particular type of determination is specified, the latter has the advantage. To declare, for example, that all change is interpretable as the transformation of energy is to commit oneself to a dogma of at least doubtful probability. But if no type is specified, and determination means anything and everything to which analogy may ever lead us to apply the term, the determinist has the advantage—such as it is. In fact, the history of the controversy contains repeated instances of the claiming by the one party as determination (or freedom) of what had been previously advanced in the opposite sense by their opponents.

The real significance of the law of causality, or the law of reciprocal determination, is as a methodological postulate. It means that in our endeavor to explain the world, we regard no datum as absolutely inexplicable. And as explanation at any stage of scientific development must operate by means of the categories available at that stage, practically this amounts to saying that the categories we already possess are equal to the entire explication of the universe. If this be false, yet it is by acting as if it were true, by carrying our hypotheses through to the bitter end, that their inadequacy becomes evident and their development proceeds.

In the second place, it is urged that all the realities we know have come into being by the very same process by which our knowledge of them has developed. This, it is affirmed, is the

great lesson of pragmatism. The making of truth (*i. e.*, the forming of true beliefs) and the making of reality are aspects of one process, namely, the development of intelligent behavior. Having such an origin, reality is necessarily (or presumably) plastic in relation to human effort.

So far as we can perceive, the evidences upon which pragmatism is founded justify no such interpretation of its leading doctrine. A simple example will help to make this clear. Crusoe, observing the footprint in the sand, becomes aware of the presence of at least one man in his vicinity. This man exists *for Crusoe* in the sense that he must be seriously taken account of in the future. But Crusoe is aware that the man existed and was in the vicinity before he discovered him; yes, that he existed *for him* in the very important sense that if they had met a variety of interesting consequences might have ensued—say a fight to the death, or the succor of a friendly bark. The case is a typical one, and the generalization is easy. The making of truth is the discovery of reality, not the making of it—except in the sense that enlarging knowledge establishes a new and very real relation between the knower and the object known, from which results of importance to both may spring. An object not known is not less real (may easily be far more dangerous) than an object known.

Perhaps this is too obvious to be conclusive. Are not all the realities of which we have knowledge man-made? Is not the best assured of them liable to be condemned tomorrow to unreality; and may not the progress of science transform the worst of unrealities—ghosts and spirit-tappings—into genuine realities? Perhaps; but such a change is never, by science or common sense, regarded as taking place in the real object; except, again, as knowing and being known are real conditions. We do not say of the demolished myth that it was real, but that it seemed so; it was our deception that was real.

In the third place, we are reminded that the real is the object of interest. Every reality is strictly relative to human character, to human desires and aversions. Hence it must change at our

will, perhaps more, perhaps less, but certainly to an appreciable extent.

The argument is fallacious, but it conceals a truth which has been highly estimated by the moral sages of ancient and modern times. Let us consider the truth first. The importance of a thing for our happiness depends upon our volitional attitude toward it. If we can maintain our indifference to the thing and its consequences, it is in so far nothing to us. The traveler is not lost if he does not care to find his way; the peasant is not poor, if his wants do not exceed his income. It is easy to multiply examples. Buddha, Antisthenes, and Rousseau, and countless lesser preachers have sufficiently familiarized us with the principle. But let us not mistake its scope. The object of interest may be pleasurable or painful. It is equally real in either case. And in neither case does the fact that it is of interest to us make it forthwith amenable to our control.

So much by way of criticism of the supposed foundations of humanism. Let us append a few queries with regard to the significance of the doctrine itself.

Humanism asserts the reality of change; and finding that change in a deterministic universe leaves the laws of change, and hence certain fundamental characteristics of the changing substances, unchanged, it declares that change in such a universe is illusory. Now would a change in the laws of change take place in accordance with the laws of change, or not? And would a change in the fundamental characteristics of substance be characteristic of the substance, or not?

It declares for the efficacy of human purposes. Is this a plea for a psychophysical interactionism? If so, it has weighty biological support. But we feel vaguely that it is intended to mean something more.

It urges us to assert our freedom by freely willing and striving for what seems good to us. Is it possible to strive intelligently except in accordance with the admitted laws of nature? Is it possible to strive to change a law of nature? If we succeeded in changing one, how would we be aware of the fact?

If these questions seem unmotivated, the reader is not widely acquainted with the recent literature of humanism.

Our attitude toward the theory of immediatism commonly held by pragmatists has been several times indicated in the course of the preceding discussions. It remains for us to formulate it definitely.

Immediatism may be broadly defined as holding that reality, or the real, is identical with immediate experience (or pure experience, or experience in its immediacy), and cannot be adequately described in conceptual terms. When we try to make this definition more precise, we find that 'immediate experience' (or 'pure experience') is used by pragmatist writers in two senses which seem not to be carefully distinguished. In the first sense, it is used (by Mr. James) to denote the genetically primary stuff from which all experience, and especially reflective experience, develops. None of us ever *has* pure experience, except in a relative application of the term. It is most closely approximated in the experience of the new-born babe or the semi-coma of a man. Taken relatively, the term is applied to our more passive states, where thinking is at its lowest ebb and we are as far as possible immersed in mere sensation. In this relative application, immediate experience is a *kind* of experience which differs from other kinds only in degree. In the second sense (used consistently by Mr. Dewey), it is an *aspect* of all experience. Even reflective thought is, *as it comes*, immediate. We shall here consider only the form of the theory which takes the term in the first sense.¹ It may be briefly set forth as follows:

The relatively pure experience of sensation is the starting-point of all our reflection. It is the given reality to which all the conceptual terms of thought refer. It does not come, however, as a mere contentless 'that'; but, "far back as we go, the flux, both as a whole and in its parts, is that of things conjunct and separated."² As applied to the content of immediate ex-

¹Professor Dewey's immediatism is discussed in the following appendix.

²James, *A Pluralistic Universe*, p. 349.

perience, the terms 'false' and 'true' have no meaning, for in this experience facts simply come and are, with their qualities and their relations. However, in their given connections, the things of immediate experience are not altogether adequate to the needs of human life. Their very concreteness and manifoldness make them too cumbersome for complicated uses. Consequently we schematize them in abstract conceptual terms, with which we may perform all sorts of calculations. But the purpose of these calculations, however complex they may be, is to take advantage of the real things of immediate experience. The function of our concepts is not to inform us of the nature of reality (what it *is*), but how to use it. Thus it is only in the light of this service that we can evaluate them as true or false. Thoughts or theories are true, not because they literally correspond to reality, but because they *represent* it in ways suitable for our specific purposes. The great conflicts of philosophy have arisen almost wholly because the function of ideas has been misunderstood. Treated as if they really did reveal to us the concrete nature of reality, they inevitably lead to contradiction and paradox. Just because they have arisen in response to specific needs, they are abstract, that is to say, one-sided, and so mutually incompatible. They yield 'theoretic' knowledge, knowledge *about* things, but are valueless for purposes of 'speculative' insight into the real nature of things. The philosopher, then, if he would really know reality, must turn his back upon *truth* and plunge unquestioning into the stream of *fact*.

We have already expressed the opinion, that the weakness of the modern empiricist lies not in too much radicalism but in too little. Why is conceptual knowledge unsatisfactory to him? Just because he still clings to a conception of absolute reality that demands the very species of truth against which the whole pragmatist movement is in revolt. Of course our thoughts and theories do not give a speculative insight that is not a *knowledge about* things, for what possible use or meaning could such insight have? The demand for an insight which is other than knowledge-

about is but a reformulation of a meaningless problem,—how things-in-themselves can be known.

The path of evolutionary doctrine is abandoned in the treatment of sense-experience, which is only relatively pure, as if it were absolutely so, and thus radically different from conceptual experience. It is not true to say of any sensation that it is just an experience in which facts come and are. The fixity and determinateness of the things of sense-experience is after all only the comparative fixity of any product of evolution. If we ask the pragmatist himself how the original pure experience of the babe or of the race comes to be transformed into such an experience as ours, his answer is that a *simon* pure experience can have no survival value. Sentience has developed only in so far as the pure experience has been broken up and become cognitive. Consciousness in us tends to persist and extend because "the tendency of raw experience to extinguish the experient himself is lessened just in the degree in which the elements in it that have a practical bearing upon life are analyzed out of the continuum and verbally fixed and coupled together, so that we may know what is in the wind for us and get ready to react in time."¹ The diversified character of our purest sense-experience is thus attributable in an indefinite degree to the work of past thought (using 'thought' in its broadest sense). There is, then, on the pragmatist's own showing, no chasm between a perceptualized and a conceptualized experience. And if the difference between them is only one of degree, why should he so urgently maintain that the criteria of truth and falsity are utterly inapplicable to sense-experience? Surely the reality of sense-experience must be correlative with its truth. To affirm reality of it at large has no significance. Everything is real in some sense. It is relevant to predicate reality of any thing, or even quality, in sense-experience, only if we mean that it is really the sort of thing, or the specific quality, we have perceived it as; and the perceiving or taking it as of any sort or species is always a true or false way of taking it.

¹*Op. cit.*, p. 350.

We suspect that pure experience, like a good many other philosophical 'realities,' is an arbitrary construct, devised to stop up the loop-holes of a theory. It is everything and nothing at once; and as it cannot be brought into evidence who shall say its author nay? It is as like observed sensations as you please; and why not, since they contain the largest proportion of it? And it is as unlike them as you please; and why not, since, after all, they are merely conceptualized products? It is "not yet any definite *what*," perhaps because to be definite is to be brought under a concept; but it is "ready to be all sorts of *whats*," for if reality were not *what* would be? It is "full both of oneness and manyness," to the eternal confusion of all rationalistic dialectic; but the "respects" in which it is one and many "don't appear." It is "changing throughout," so that change is as little mysterious as the one and the many; but it changes "so confusedly that its phases interpenetrate and no points, either of distinction or of identity, can be caught."¹ This is all very convenient, but hardly convincing. Mr. James does not like historical parallels; but we cannot help thinking of the much abused substance of Spinoza, which while being one and indivisible contains an endless multiplicity, and while incapable of change or of the emotional perception of change, loves itself with an infinite intellectual love.

¹*Op. cit.*, p. 348.

APPENDIX II

THE PRACTICAL CHARACTER OF REALITY¹

Recent discussions of the practical character of reality seem very significant when one considers their bearing on the relation between what are probably the two most distinctive doctrines of pragmatism. The first of these doctrines may be called instrumentalism; the second is immediatism. By instrumentalism is meant that element of pragmatism which has grown out of the application of the evolutionary method to logical problems. The evolutionary method in general prescribes that, in order to understand the existing nature of anything, we inquire into its origin and development, and that this development be in every case explained as an adjustment to the specific conditions under which it has taken place. When this method is applied to logic, it means, in the first place, that thought itself has arisen as a mode of organic adjustment to environment, and that its whole development has been, and is, determined with reference to this function. In the second place, and more particularly, instrumentalism means that all distinctions and terms of thought, that is to say, all meanings, are relative to the specific conditions which have called them forth and to the functions which they perform. This carries with it a denial of absolutism in all its historic forms, from the Platonic doctrine of the absolute good to the neo-Hegelian conception of reality as completely organized experience.

It is from the standpoint of instrumentalism that the pragmatist has so effectively sought to discredit the venerable disciplines of ontology and epistemology, whose aim is the investigation of reality as such or knowing as such. As profitably, argues the pragmatist, might we discuss with the pre-Kantian rationalist the nature of man as such, without reference to his biological relations to lower species and the conditions of his development

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from them. In place of epistemology, that outworn relic of rationalism, he would substitute a genetic investigation of the relation of thinking to other modes of experiencing, together with an inquiry into the specific conditions under which the various thought-processes arise and subside. The absolutist's condemnation of such procedure as 'merely psychological' he would stigmatize as parallel to the vitalist's contempt for the chemical investigation of organic processes as 'merely mechanical.' The claim, that psychological investigation is essentially and ultimately incapable of throwing light on the nature of meaning, is, he would urge, as unfounded as the claim that vital reactions are in essence not amenable to chemical analysis.

A very similar conclusion regarding the investigation of the nature of reality we might suppose to be the natural expression of the instrumentalist attitude toward ontology. We might suppose, for example, the pragmatist pointing out the dualism in which absolutistic philosophy has generally issued, as a result of the attempt to define reality in existential (as distinct from functional) terms. Such a dualism, he might say, is practically inevitable; for the characterization of one form, or even aspect, of being as real thereby implies the unreality of other forms or aspects, and makes inexplicable the relation between the two divisions. The dualism may, perhaps, be avoided, but only by the expedient of maintaining that all being is real, in which case the term 'real' loses all significance. From the instrumentalist standpoint, the inquiry, *What is reality?* appears as futile as did the question, *What is the cause of the world?* to Kant. And we may imagine the pragmatist to urge of reality, even as Kant did of causality, that it is a conception applicable to the particular objects of experience in relation to each other, but utterly barren if applied to existence as a whole. But the advocate of instrumentalism would go farther than Kant. Something like this, perhaps, is the argument we may conceive him to advance. If one asks the cause of a given event, a complete answer would include the description of the whole preceding state of the uni-

verse. On the other hand, the attempt to give a perfectly accurate account of the event itself would equally involve a description of the contemporaneous state of the universe. Completeness of statement in either case means the entire loss of all significance. No event is left and no cause can be adduced. How much, then, of the preceding state of the universe is to be regarded as the sufficient cause of any event? What degree of completeness does 'truth' demand? The only answer is: So much as is relevant to the purposes of the particular inquiry in hand. In fine, what may be regarded as a true account of the event, and what as an adequate description of its cause, is relative to the purposes of the investigation,—it is a 'practical' matter. The case is similar in regard to reality. What any object or event really is, always depends on the context and occasion in connection with which the object or event is considered. Taken 'at large,'—to use Professor Dewey's phrase,—the inquiry is futile because indeterminate. The 'real,' again, is always such by distinction from the 'unreal,' or the 'apparent,' or even the 'ideal.' The ground for the distinction is always specific, and is to be found in the particular circumstances and exigencies which have given rise to it. The only general theory of reality (as of causality) must be functional; that is, it must be an account of the general service which the distinction 'real-unreal' performs in our actual processes of thought. Such, in brief, is the position which we might suppose the pragmatist to take, and something of this sort we might suppose him to mean when he speaks of the 'practical character of reality.'

Let us now turn to what has been mentioned as the second distinctive doctrine of pragmatism, namely, immediatism. In the following discussion I shall, for purposes of brevity, confine myself to a consideration of immediatism as it appears in Professor Dewey's writings. In this matter he seems to be in substantial agreement with other leading exponents of pragmatism, notably Professor James¹; and if the thesis which is here to be

¹We have pointed out in the preceding Appendix that this is not strictly true.

advanced is valid with reference to Professor Dewey's position, it will, I think, hold respecting that of Professor James.

The doctrine of immediatism is the pragmatist's substitute for ontology. It is briefly expressed in the formula, that reality is, or things really are, what they are experienced as. The formula owes its point to the distinction between things as known and things as otherwise experienced. The fallacy of older theories is supposed to lie precisely in the assumption, that the object of knowledge alone is real; or, otherwise put, that reality sustains but a single sort of relation to us, namely, that of object to be known. Such an assumption, however, fails signally to do justice either to the nature of reality, or to our relations to it. For reality is practical; and, besides being object of knowledge, it is that with which we hold commerce,—economic, ethical, æsthetic, and the like. Hence it *is* whatever, and all, it is experienced to be. More specifically, the real is what it is *immediately* experienced as, not alone what it is found to be for a later reflection. Thus, in the illustration used by Professor Dewey, the noise heard in the night is *really* fearsome, even though investigation shows it to be only the harmless flapping of a shade in the wind. This is not meant to imply that the object of the subsequent knowledge-experience is unreal (because known as harmless), but merely that the object known has no exclusive title to reality. The knowledge-experience, albeit the issue of a process of mediation, is, as experience, itself immediate, and hence as real, if no more real, than any other kind of experience. Reality, then, is identifiable with experience in its immediate aspect. To the objection that the real object thus becomes the subject of contradictory predicates, the reply of the pragmatist is that the ascription of contradictory predicates becomes a difficulty only when the real object is conceived as a static entity. The solution lies in conceiving the real itself to change. The noise of the illustration is really fearsome and really harmless, just because the reality experienced has changed, and changed, indeed, by virtue of the knowing itself. It is a false account of

the occurrence to describe the change as being merely in our attitude and thus subjective. The real thing, that is, the thing as actually experienced, has changed. It is all one, indeed, whether we say that the thing experienced has changed, or that experience has changed. Things are no other than our experience of them; and experience is no other than the things experienced.

But not only do we discover the real nature of such things as particular noises, horses, and chairs, by asking what they are experienced as; but we must apply the same method in our inquiry into the nature of all manner of metaphysical quiddities. As Professor Dewey says: "If you wish to find out what subjective, objective, physical, mental, cosmic, psychic, cause, substance, purpose, activity, evil, quantity,—any philosophic term, in short,—means, go to experience and see what it is experienced as."

Suppose, now, we attempt to apply this method to the very subject under discussion, the nature of reality itself. Has Professor Dewey, we may well ask, followed the method of immediate empiricism in his account of reality? Has he asked what reality itself is experienced as? Or has he, since reality is only another name for the different reals of experience, asked what a real thing is experienced as? For surely, although 'real thing' may perhaps be conceived as identical with 'thing experienced,' it is not immediately experienced *as* such. If a 'really fearsome noise' is not experienced as something over and above a 'fearsome noise,' the 'real' is not experienced at all. As well might the fearsome noise be described as harmless, since investigation shows it to be such. For is it not perfectly manifest, that it is only for subsequent reflection that the 'fearsome noise' can become a 'really fearsome noise,' just as it is only for subsequent reflection that it could have become a 'not really fearsome' but 'really harmless noise'? The experience ' $A-B$ ' is surely not identical with the experience 'really $A-B$ '; and it would seem that the inquiry to which the immediatist is committed is: What is the nature of this experienced difference?

But what now shall we say of the doctrine, that reality is to be identified with the immediate? Surely if immediatism means that all things are what they are experienced as, then it is not true to say that all things as they are experienced *are* real; for they are not experienced *as* real. The doctrine of immediatism can no more legitimately supply a definition of reality than it can, for example, of causality. All it can with any semblance of consistency claim to offer is a method for discovering either. If as immediatists we would discover the nature of reality, we must, in Professor Dewey's words, go to experience and see what it is experienced as; and, still imitating his language, one may say that this would be found no short and easy method.

It is not my purpose, however, simply to convict immediatism of self-contradiction. Let it be admitted for argument's sake that the self-contradiction just pointed out is merely verbal, and that, in Professor Dewey's thought, the term 'reality' is used as synonymous with 'things as immediately experienced'; and let us consider on its own merits the doctrine that things are what they are experienced as. No difficulty may, at first sight, seem to arise, so long as we consider experiences of particular things. The noise which alarms us in the night *is* a fearsome thing; and, when later we find it to be caused by the wind, it *is*, again, a harmless thing. So the horse we use for our afternoon drive is the means of relief from the pressure of the day's cares; although later, when we learn that it grows frantic with fear when it meets a motor-car, it becomes no longer a means of recreation but an unwelcome responsibility. So far we may perhaps follow the immediatist dictum, that things are what they are experienced as. But suppose the case in point be the nature of some universal; say, for instance, the universal 'horse.' What is 'horse' experienced as? How, in general terms, can the immediatist describe the difference between the experience of a universal and that of a particular? The discussions of immediatism by Professor Dewey have given me no material help toward an answer to this question. In regard to one universal?

'reality', the assumption, indeed, seems to be that the experience of the different particular real things is no other than the experience of reality itself. But it is scarcely conceivable that in reply to the question, "What is the nature of the universal 'horse'?" the pragmatist would point to the various experiences of particular horses and say: "That is what 'horse' is experienced as." To such a reply the retort is obvious,—“How is the experience of these numerous and varying objects *as* 'horses' to be described?” No, the only seemingly possible position for the pragmatist to take is the one which we find him actually taking; namely, that the universal is experienced as a tool in the processes of reflective thought, and that, although these are processes of meditation, yet as modes of experiencing they are themselves immediate. Thus we find Professor Dewey saying: "Lest I be charged with intimating that concepts are unreal and unempirical, I say forthwith that I believe meanings may be and are immediately experienced *as* conceptual."¹ Suppose we ask, however, just what in such a process of mediation is immediately experienced. Here it is important to recall that the thing experienced and the experience are the same. The thing immediately experienced in the process of mediation, accordingly, is the process of mediation itself. The terms in which the process is carried on, the tools by which the reconstitution is effected, are not themselves immediately experienced. In pragmatist references to universals they usually are described as *Denkmittel*, instruments of analysis, means by which we are enabled to deal successfully with facts and lead our thinking to successful issue. They are, in short, described in functional terms. Yet one could scarcely state the essence of the immediatist theory of reality better than to characterize it as the belief that the real nature of things is to be found in structure and not in function. Perhaps the difficulty may be better presented in this way. The first principle of immediatism is that things are what they are experienced as. But universals are not described by the prag-

¹*Journal of Philos.*, p. 599, note.

matist in terms of what they are experienced *as*, but in terms of the functions they perform. Universals are, it is said, tools of the process of reflection; but surely it cannot be said that they are immediately experienced *as* such. Indeed, it is only for the speculation of the pragmatist that the universal becomes interpreted as a tool, that is to say, as a mediator. Even so, the noise heard in the night may be described as a stimulus to the specific organic reaction which follows; but it is not *as* such a stimulus that it is experienced. Doubtless, universals must, as Professor Dewey says, "somehow enter into experience"; and, doubtless, "all experience is *as existence* immediate"; but, if this last remark is to have any force, it obviously implies that experience *as meaning* is not immediate.

It seems impossible, then, that universals should be immediately experienced. Laying aside the problem which now emerges regarding the status of universals thus banished from the realm of reality, let us turn to the no less urgent problem of the relation of universal to particular. For immediatism, it is evident, is brought face to face with a dualism of particular and universal as radical as that faced by the older empiricism. One finds, indeed, in the writings of pragmatists suggestions as to how this difficulty may be met. Knowing, it is urged, as compared with other modes of experiencing, is not absolutely *sui generis*. It is, indeed, nothing other than the mode in which the conflicting values and meanings of immediate experiences become transformed and adjusted. It is false to assert that any irreconcilable dualism exists between the tools of the knowing-experience and the things which they serve to readjust. For, on the one hand, the very nature of these tools is determined by the specific maladjustments and tensions of the immediate experience which call for the reconstitution; and, on the other hand, the nature of these tools by which the reconstitution is effected determines the nature of the immediate experience in which the process issues. In other words, the relation of universals, which are always mediate terms of thought, to the particular things of immediate ex-

perience lies in the uncertainty and doubtfulness existing within the immediate experience itself.

In reply to this argument, I would submit, in the first place, that immediate experience can contain no uncertainty and doubtfulness such as to demand mediation; but that as immediate it is utterly incapable of giving rise to any inquiry whatsoever. Let the point be perfectly clear. An immediate experience may, indeed, be one of vagueness, doubt, uncertainty; but this very uncertainty becomes then the thing experienced, and is not itself uncertain. There can be no possible doubt as to *what is experienced*, since any doubtfulness felt is itself precisely what is experienced. It is only an experience which contains a doubt as to the nature of the thing experienced, that stands in need of, or can possibly evoke, reconstitution. As Professor Dewey himself says in the *Studies*: "It is the uncertainty as to the *what* of the experience, together with the certainty *that* there is such an experience, that evokes the thought-function" (p. 40). But, if the thing experienced is just the experience itself, there is no possible distinction between the *what* and the *that*. The *what* is the *that*. It is this very confusion of the *that* and the *what* which is, I believe, the source of the dogma of the certainty of immediate experience. "If *any* experience," Professor Dewey writes, "then a *determinate* experience."¹ So also might it be said: "If *any* existence, then a *determinate* existence." We see a tree in the yard, and we assume (as indeed we must, if only as a working hypothesis) that as an objective thing the tree is perfectly determinate in every particular. But this is not to assert that any possible description of the tree can adequately express its determinations. On the contrary, we would say that every possible statement about the tree is fundamentally hypothetical, and subject to correction. Just so, we must say that any given experience, is as an objective thing, perfectly determinate; but our statements about the nature of this experience are just as truly hypothetical as are our statements about the nature of the

¹*Journal of Philos.*, Vol. II, p. 398.

tree,—else why the need of trained introspection? Again, Professor Dewey writes: "It is a situation which is organized or constituted as a whole, and which yet is falling to pieces in its parts,—a situation which is in conflict with itself,—that arouses the search to find what really goes together and a correspondent effort to shut out what only seemingly belongs together" (p. 37). But within the immediate experience there can be no question as to what really, and what only seemingly, goes together. Either things go together or they do not; and in either case it is really, and not seemingly.

Now it is just this failure of immediatism to distinguish the *what* from the *that*, this attempted reduction of meaning to existence, which marks the fatal separation of universal and particular. This will perhaps be evident if we again consider one of Professor Dewey's illustrations, that of the Zöllner lines.¹ One would naturally say of these lines that they are seen as convergent, but are really not convergent but parallel. To such a statement of the case, however, Professor Dewey takes exception. The lines of the experience in which the illusion occurs, he maintains, are *really* convergent, not merely seen as such. But how, we must ask, are lines experienced as convergent? What do we *mean* by describing lines as convergent? Convergent lines are commonly defined as those which, when extended, meet in a point. But the lines-of-that-experience cannot possibly be conceived to be extended, without thereby becoming the lines of some other experience. Evidently, then, the lines which are seen to be convergent are not the lines-of-that-experience, in the immediate particularity of the experience; they are not the lines of any *particular* experience at all; they are the *real lines*. That is to say, if the paradox be allowed, the lines-of-that-experience are not real *lines* at all. For what is a real line? Surely something that can be extended and measured and divided; something which (to adapt a phrase of Professor Dewey's) is good for something else in the way of experience. And this, I venture

¹*Journal of Philos.*, Vol. II, p. 397.

to assert, is just what a 'real thing' means (at least, this is one of the meanings of 'real'),—a thing good for something else in the way of experience. To experience a thing *as* real is to experience it as having reference to that which is not contained in the experience itself. And here we come into open contradiction with immediatism. For this is precisely what the things of immediate experience are not,—good for anything else in the way of experience,—provided that things experienced are, indeed, the experiences themselves.

To put the matter otherwise, the 'real,' I should say, is never immediately experienced at all; it is always ideal. This being so, it turns out that all experiences are not equally good at telling what the nature of a thing really is. If they were, there would be no such thing as illusions at all. In the case of the Zöllner lines, the visual experience is not as good as an experience of measuring for telling whether the lines really are convergent or not. Perhaps the question may arise: If 'convergent' means 'meeting in a point when produced,' what is meant by seeing lines 'as convergent' when they do not actually meet? Simply that a certain visual appearance, now recognized, has come to be a sign or symbol of other experiences. Indeed, the association of these experiences with this visual appearance is so close, that 'convergent' is often used to denote the visual appearance without explicit reference to the possible extension of the convergent lines to a meeting-point. Thus in the illusion we do, as Professor Dewey says, see real convergence, in the sense that we do actually experience this visual appearance. But let the question arise, whether the lines are really convergent or not; and the reference is no longer to the visual appearance alone, but to the possibility of actually extending the lines until they meet, or of applying some other recognized test of convergence. It is this ambiguity in the meaning of 'convergent' which, it seems to me, makes plausible the contention of Professor Dewey, that the lines of the Zöllner illusion are really convergent. And there is, I believe, a similar ambiguity in the

meaning of 'fearsome' as used in the previous illustration. The noise, was, indeed 'really fearsome,' in the sense of actually giving rise to the emotion of fear. But 'fearsome' also means simply *dangerous*: and it is this meaning of the term which we have in mind, when after investigation we say that the noise is not really fearsome but harmless. For there certainly could never arise any question as to whether the noise was really fearsome or really harmless, unless fearsome meant more than actually exciting fear. So the question, what things really are, has meaning only because it refers beyond the particular immediate experience of the things,—not, to be sure, to any reality lying beyond experience, but to other possible experiences of the things. This is true, even if the question be, for example, whether a certain book is really gray. Does the gray I now see belong to the object, or is it merely subjective? The question is not as to the reality of my sensation of grayness, but whether the gray is a part of the nature of the book or not. And the answer to this question involves reference beyond the present experience. For it may be that the apparent grayness is the result of peculiar conditions of the lighting, and that in a better light the book is blue. The experience of a thing *as* anything is always an interpretation, an assumption on which we act in our dealings with it; and the question as to the *real* nature of the thing refers to the verification of the assumption.

What now is to be said of the practical character of reality and of the claim that knowing changes reality? Is it truism, paradox, or significant truth? For evidently the answer given to this question will vary with the interpretation of the term 'reality.' Let us first consider the matter from the standpoint of a consistent immediatism. If real things are things as experienced, and if things as experienced are no other than the experiences themselves, then it would seem the doctrine that knowing changes reality becomes a mere truism, which is better expressed by saying that knowing *is* a change in reality, or that the process of learning is a real change.

Secondly, from another point of view, the doctrine may, I think, be shown to be not a truism but a paradox. As was pointed out earlier in this article, one would suppose the question of primary importance to the immediatist in his investigation of the nature of reality to be: What is the difference between the experience ' $A-B$ ' and the experience 'really $A-B$ '? In other words, one would expect him to seek to determine empirically when and how a thing is experienced as real. Let us, then, taking the part of immediatists, raise this question. In the first place, it would seem that a thing is experienced as real, only when there has been some question regarding its nature. That is to say, we are led to characterize it as really this kind of a thing, only when its nature has been subject to doubt and inquiry. Now to characterize a thing as this or that means to regard it as promising a specific sort of future experience. The characterization of the thing *as really* this or that means that after investigation we regard this promise as confirmed; not necessarily because we have experienced the actual fulfillment of the promise, but because satisfactory evidence has been adduced that the promise would be fulfilled under certain specified conditions.

(The question may perhaps be raised, whether a runaway horse is not experienced as 'really' dangerous, when we get out of its way. We are surely acting as if it were good for dangerous consequences, even if we do not explicitly frame the judgment, 'That horse is dangerous,' before taking to our heels. True; but my point is that for a consistent immediatism in such an experience 'reality,' or the 'real,' is not experienced at all. A really dangerous horse is a horse experienced as 'really dangerous.' The horse may for a subsequent experience be 'really dangerous,' but only in so far as my action in getting out of his way has been made the subject of inquiry and judged right.)

If this analysis be correct, and it is only the thing subjected to inquiry that is immediately experienced as real, we have reached a conclusion of great significance for immediatism. For the thing that has undergone the process of inquiry is precisely the

thing known. *Thus it is only the object known that is experienced as real.* The paradoxical character of the doctrine that knowing changes reality is now apparent. For if we experience the real only as the outcome of the knowing experience, it surely cannot be the real that is changed by the process of knowing.

But there is another sense in which the immediatist doctrine shows itself to be paradoxical. As conceived by the immediatist, the object known, the outcome of the knowing-experience, is the earlier experienced reality transformed in a certain specific way. It is emphatically not a different reality. The object known is essentially the same thing that was experienced in the initial stage of the process. The whole purpose of the knowing is just to effect a specific change in the thing experienced. It may, in fact, be described as a specific sort of transformation taking place in things. The significance of describing reality as practical lies in the refusal to regard the real nature of things as something to be distinguished from our personal subjective attitudes toward them. And it is this same refusal which likewise gives point to the assertion, that things are what they are experienced as. For they are experienced as standing in personal, practical relations to us,—as means, ends, obstacles, dangers, delights. In other words, as things are experienced there is no distinction between the merely subjective and the objective itself, between our personal attitude and the thing experienced. In Professor Dewey's words, the thing experienced is just the experience itself. How, then, it seems pertinent to ask, does this distinction of subjective and objective arise? Is it a purposeless device of sheer intellectualism? Or, on the contrary, is it not the very purpose of the knowing-experience to make just this distinction? Is not knowing evoked for the sake of determining what in the initial experience is to be regarded as objective and what as merely personal and subjective? And does not the outcome of the knowing-experience, the object known, include and preserve just that part of the content of the earlier experience which has been determined as objective? And, contrariwise, is not that part of

the earlier experience which is not preserved in the knowledge-experience as characteristic of the object known, regarded as unreal? To say, then, that the object known is essentially the same *thing* as the earlier experience becomes unintelligible. For the earlier experience is not a *thing* in the same sense as is the object known. It is both more and less than a thing; more, by virtue of those subjective factors the discarding of which is necessary in order to make it a thing; and less, because it lacks that supplementation from related experiences through which the thing acquires external and internal consistency. The paradox of immediatism thus becomes acute. For that aspect of the earlier experience which has been determined as real is just that which is regarded as having remained unchanged throughout the process.

There is one sense, however, in which, as it appears to me, reality may well be characterized as practical; but it is a sense almost directly opposed to that in which Professor Dewey has employed the phrase. Whereas reality has been called practical because it is conceived to change with every change of our subjective attitude toward it, may not its practical character be more truly urged on the ground of its stability throughout the changes of our attitudes? Let it be granted that things have been discriminated and are defined in reference to the practical needs of human life. Yet it is equally true, that if a thing bore but a single relation to our needs, it could never be discriminated as a 'thing.' It is just because a thing does stand in such a diversity of relations to us, and because at the same time it maintains a certain experienced identity of character amidst this diversity of relationship, that it becomes a 'thing' at all. Its recognition as a thing marks the distinguishing of this continuity of character from the changes of relationship it undergoes. Thus the definition of the real nature of a thing as what it is apart from our practical attitudes toward it, is not a piece of intellectualism; it is a vital necessity for conduct as well as thought.

But in order to appreciate the real significance of the immediatist conception of reality as actual experience, we must recall to mind the ontological theory in opposition to which it has been urged. This is, of course, the theory of reality held by absolute idealism. According to this theory, reality is, indeed, object of knowledge; not, however, of knowledge as cumbered with its contingent imperfections, but of knowledge as such,—that is, in so far as it *is* knowledge, or conforms to the eternal ideal of what knowledge should and must be. Or, again, it is the object of absolute knowledge, the content of a single all-embracing experience in which every element is what it is by reason of its relation to and determination by every other element. It is a perfect system, no part of which can be abstractly considered without falsification. Moreover, it embraces not simply relations between contemporary states but between successive events. The processes of the cosmos constitute one evolution, every stage of which is an essential aspect of the system of reality. Just as the human organism may be understood to embrace, not simply the set of tissues and organs belonging to a man at one stage of his development but the whole life-process itself from the beginning to the end of individual existence; so reality is understood to be limited to no single cross-section of evolution,—it embraces the universe throughout all its transformations. It is in this sense that it is described as eternal. Change, indeed, is real, but it is not reality which changes; for reality is precisely that which includes all changes within itself. Accordingly, as applied to any particular thing or event, reality means its nature as an element of the infinite system, and as determined thus by its relation to all other things or events. The real individual is the infinitely determinate individual,—determinate, moreover, not simply for the thought of any particular inquiring consciousness, but for the absolute thought which is the norm to which every rational inquiry submits itself for final judgment.

In criticism of this theory, pragmatism urges that such a conception of reality and truth must remain utterly inoperative as a

criterion for evaluating the realities and truths of actual experience. No actual judgment as to the real nature of anything ever was or will be found true or false by comparison with the standard of an absolutely completed knowledge. For the purposes of actual thought, the real nature of any individual never can mean what it is as determined by its relations to all other things in the universe. For so to extend the meaning of 'individual' is to deprive it of all significance; just as the similar extension of the idea of 'cause' deprives it of significance. And if it be urged by the absolute idealist that the realities and truths of human thought must by the philosopher be judged neither real nor unreal, true nor false, but as representing degrees of reality and truth; the reply is that the absolute mind with its reality and truth is separated by an infinite gap from human thought, and that the former can be no measure of degrees in the latter, —just as an infinite straight line can be no measure of the lengths of finite straight lines.

In short, from the standpoint of instrumentalism, reality and truth as defined by absolute idealism are merely *limiting conceptions*; and, like the limiting conceptions of mathematics and mechanics, they must be criticised both as displaying irreconcilable self-contradictions and as failing to represent the concrete facts of actual experience. But this is not to assert that when their limitations are recognized they are not effective instruments of analysis. Take the case of the pulley for example. As a pulley is defined by mechanics, the cord must be perfectly flexible and the wheel on which it runs perfectly frictionless. Only when these conditions are fulfilled have we, from the standpoint of pure science, a real pulley. Suppose a pragmatist mechanic to reply: "Not so. The flexible cords and frictionless wheels of pure mechanics are sheer abstractions. If you would understand what a pulley really is, observe the ropes and wheels that men use in actual life,—these are *real* pulleys." To such a criticism of the definitions of pure mechanics the reply is obvious; for the definitions of mechanics do, indeed, represent the outcome

of a study of the ropes and wheels of common life; and, if they are abstractions, it is because such abstractions are a practical necessity and owe their justification to their necessity. Moreover, it is only by regarding the actual ropes and wheels *as if they were* perfectly flexible and perfectly frictionless, that the principle of the pulley can be applied to them. It is true that such procedure involves error, for which allowance may be made. But allowance is made only for error that is not negligible; and it is made, too, in terms that are as ideal and schematic as the perfect pulley itself; and when all is said and done there ever remains uneliminated error, whose correction would demand an infinite analysis. What the instrumentalist would point to as significant is just this ever-present factor of negligible error. Just what degree of error is negligible in a given case is always determined by the purpose for which the calculation is made. Whether the actual structure of ropes and wheels and weights is a real *pulley* or not depends on whether, for the needs of the existing occasion, the cords and wheels may be regarded *as if* perfectly flexible and perfectly frictionless. In short, the dispute as to whether the pulley of abstract mechanics or the structure of ropes and wheels which draws the bucket of water from the well is the real pulley, is, after all a verbal difference. The one is real, just because of its practical usefulness in computations; the other is a real pulley, because it may, for the purpose in hand, be regarded as conforming to the conditions defined by mechanics.

From the standpoint of instrumentalism, the case is similar as regards reality and truth. It may be admitted that, abstractly considered, we find a pure case of reality only in the completely determined, the object of absolute knowledge. Shall we then say that the things of human experience are merely phenomenal, in that we know them as only partially determined, or even because it is evident that, were they known to us as completely determined, they would thereby become transformed beyond recognition? Shall we say that all human judgments are essentially untrue, because their correction would involve an infinite

process of thought? Assuredly not. Yet we are not thereby committed to say with the immediatist that reality is just our unanalyzed immediate experience, and that the real nature of noises and lines and events in no other than what they have been actually experienced as. For the assumption that a given thing really possesses the character we ascribe to it, implies not only that (as we have already pointed out) it has stood the test of inquiry, but also that it may be counted upon similarly to bear the light of any future inquiry,—that it to say, no matter what further investigation might reveal about the thing, what we know now will stand as an integral part of the enlarged knowledge of it. This assumption, as we are ever, upon reflection, ready to admit, is erroneous; for we are aware that the enlargement of knowledge does not take place by mere addition to the existing stock, but continually involves the modification and even transformation of that which has hitherto been accepted as most assured and most fundamental. In other words, the untruth of the assumption is simply the untruth which attaches to any abstraction whatsoever,—the mistake of supposing that a partial account of anything may be absolutely true so far as it goes. The fact remains, that all our actual knowledge is of this sort,—an everlasting synecdoche in which the abstract poses for the concrete. The very terms in which our most certain judgments are expressed are themselves only relatively determinate. But let us note that even as we demand only that degree of flexibility in the cord of our pulley which will satisfy the requirements of our purpose, so it is only a certain degree of determinateness which is relevant to the ends of either action or thought. A certain degree of indeterminateness is negligible; and, as in the case of the pulley, just how much is negligible depends upon the specific purpose of the application.

And so we may, as instrumentalists, find a new interpretation for the absolute idealist's definition of reality. It may be legitimately taken as a description of a 'pure case,' or ideal limit, analogous to the fundamental formulæ of the mathematical sci-

ences. It has the same advantage as such formulæ, namely, that of an efficient instrument for the analysis of experience; and it has likewise the same defects. When it is exalted, however, into a metaphysical first principle, a result follows which is analogous to that which we find proceeding from the similar exaltation of the primary definitions of mechanics,—that is to say, a dogmatic absolutism quite as sterile when applied to the concrete issues of human life as any materialism could well be. Our actual investigations into the real nature of anything never aim at the description of this nature in its infinite entirety. On the contrary, they are always undertaken from some definite point of view, and are carried on with reference to some specific practical or theoretical interest; and it is this interest which furnishes a criterion for the success of the investigation. But within these limits the investigation may be said to have achieved success, when the description it furnishes of the real nature of the thing may be regarded *as if* completely determinate; when, that is, its indeterminateness is negligible with reference to the purpose for which the investigation has been undertaken.

Thus, from the standpoint of instrumentalism, both absolute idealism and immediatism have erred in failing to recognize that a general definition of reality can be given only in functional terms. The claim of immediatism that reality changes, and changes by virtue of the process of knowing, is indeed valid, if by it be meant that the specific content to which the characteristic 'real' attaches changes from situation to situation, or from stage to stage of scientific progress. But it is nevertheless untrue, that, from the standpoint of any completed inquiry, the concrete reality of that standpoint can be regarded as having been transformed in the process of inquiry just finished; for, as has been pointed out, reality means just that content which is regarded as unchanged by the process.

Let me add a last word in comment upon the claim of immediatism to be regarded simply as a method, using as my text the following declaration of Professor Dewey: "From the postulate

of [immediate] empiricism, then (or, what is the same thing, from a general consideration of the concept of experience) nothing can be deduced, not a single philosophical proposition. . . . But the real significance of the principle is that of a method of philosophical analysis."¹ Now, in the first place, if the method has even any *prima facie* claim upon our attention, it must pretend to an appropriateness to the subject-matter to which it is to be applied, and must hence imply something as to the character of that subject-matter. The declaration quoted is parallel to the belief of Descartes that he has doubted all that can be doubted, while he yet has firmly in hand a method for the elaboration of all science. Rather is it true, that a whole philosophy is implicit in the assumption of that method,—if only because the choice of method means the acceptance of an ideal of truth, a standard of that which shall be admitted into the results. It may be said that the immediatist, for his part, is willing to accept *anything* that experience is or contains. But, even so, Descartes is willing to accept *anything* that can be demonstrated from self-evident first principles. The very conception of immediate experience, or of experience as immediate, implies that a body of unequivocal data are given and can be discovered by inspection,—are prior, that is, to all interpretation, and thus form an unquestioned basis for all interpretation. It may well be questioned, however, whether this notion of the 'given' is not simply another *limiting conception*,—like the pulley, again, or 'reality' itself,—never precisely exemplified in any definable content, though admittedly a most useful instrument for the analysis of all manner of experiences.

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